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ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Petroleum products supplied rose 65 thousand B/D (0.4%) over year-earlier levels in October, as deliveries of kerosine jet fuel, distillates, and residual fuel oil registered advances while gasoline deliveries declined. The year-to-year comparison for total product deliveries suffers from the fact that October 1984 deliveries were well below the trend of preceding months, and that October 1985 deliveries, in fact, were down 150-200 thousand B/D below the recent-month deseasonalized trend, largely because of below-trend gasoline demand. For the year to date, gasoline and kerosine jet fuel deliveries were the only products on the plus side compared with the prior year's delivery levels.

Crude oil production rose in October, its 0.6% gain even with year-to-date performance; Alaskan output increases again exceeded production decreases in the lower 48. Imports continued to trail year-earlier levels, the year-to-year decrease in October, however, to a larger degree attributable to product imports rather than to crude purchases. Inventories were about 4 million barrels above estimated September levels, an increase less than half the historical inventory build for this time of year.

PRODUCTS SUPPLIED[1]

Gasoline

DOWN SLIGHTLY VERSUS LAST YEAR.

Deliveries of gasoline fell 14 thousand B/D (0.2%) in October, compared with last year's level. When added average blenders' volume, counted this year but not part of the reporting universe last year, is deducted — more than 50 thousand B/D on recently-revised basis — the year-to-year decrease deepens. In fact, a comparison of gasoline demand trends indicates that October delivery levels fell some 200 thousand B/D short of recent-months levels.

For the first 9 months of the year, year-to-year increases in gasoline deliveries had averaged about 140 thousand B/D, or roughly 2%, and even when adjusted for changes in the reporting population had been roughly 1¼%. The failure of October deliveries to continue that trend can only be in small part attributed to weather conditions in portions of the country late in the month. Real disposable income has undergone virtually no change since mid-summer, though it is estimated to be up a minimal 1% since last year (Sept. '84/Sept. '85). With the change in real gasoline prices minimal, this still leaves a sizable portion of the year-to-year decline largely unexplained, though delays in purchases for non-primary storage may have been a factor.

Despite a mid-month upturn, October's gasoline prices, on average, were still roughly ½¢ below September's. On an inflation-adjusted basis, they also continued to trail last year's levels.

Unleaded gasoline's market share, at almost 65%, stayed within the mid-sixties range that has now prevailed for several months.

An article dealing with the major factors that have contributed to recent-year changes in fuel efficiency — and thus in gasoline demand — appears in this issue.

Distillates

3% DELIVERIES INCREASE OVER LAST OCTOBER.

Distillate deliveries increased 85 thousand B/D (3.1%) over October 1984 levels. While October weather was colder than last year, the effect of temperature deviations on distillate deliveries during a beginning-of-the-season month is small — perhaps only 20-30 thousand B/D for this October. In addition, holders of non-primary inventories may have resumed limited filling of their storage tanks in October. The resultant increase in deliveries is estimated to have been in the 50-100 thousand B/D range. Rail traffic levels were slightly higher in October than last year, following several months of year-to-year declines. Judging by recent trends, truck traffic is estimated to have experienced a somewhat lesser year-to-year decrease than in prior months. The net decrease in deliveries attributable to October changes in these two sectors of the distillate market is estimated to have been about 40 thousand B/D.

Residual Fuel Oil

ALMOST 7% HIGHER THAN LAST OCTOBER'S LEVEL.

For only the second time this year, residual fuel oil deliveries were higher in October than a year ago, rising 71 thousand B/D (6.7%). October's delivery levels were 50-100 thousand B/D above recent-month trends. For the year to date, deliveries are still an estimated 196 thousand B/D (14.1%) lower than for the corresponding 1984 period.

Spot market transactions have been garnering an increasing share of the wholesale natural gas market and, in the process, apparently have been exerting growing influence on the direction of prices in the rest of the market. As a result, natural gas prices overall continued their downward drift in October. However, the size of their decline was considerably less than the drop in residual fuel oil prices, which fell $2-3 per barrel from September levels to almost equal late-spring lows.

Deliveries of residual fuel oil to electric utilities are estimated to have been almost 200 thousand B/D below last year in August and may also have been below last year in September, as prices had strengthened considerably that month. However, with continuing year-to-year electric output increases combining with a substantial October resid price decrease, delivery levels may well have recovered in October, significantly reducing the year-to-year decline level. Similarly, the industrial sector, usually prompt to take advantage of swings in the relative prices of competing fuels because of substantial dual-fuel capability, may have experienced a slight year-to-year increase in October. Industrial production levels, while rising only minimally in recent months, are still more than 1% ahead of last year, giving a small boost to energy demand.

Bunker fuel deliveries, up about 10 thousand B/D, on average, for the first eight months of 1985 over the corresponding period last year, experienced sizable month-to-month swings, in part because of relative price fluctuations versus postings in other world ports. With prices down somewhat in October, we estimate that a small year-to-year improvement in demand occurred in October.

Kerosine Jet Fuel

ABOUT 3% HIGHER THAN LAST YEAR.

Kerosine jet fuel deliveries, again exceeding the 1 million B/D mark, were up 28 thousand B/D (2.8%) over last October. For the year to date, deliveries were about 19 thousand B/D (2.0%) ahead of last year.

For the first half of the year, year-to-year traffic increases averaged 3%-4%; however, strong air traffic levels lifted third-quarter "miles traveled" increases to the 4%-5% range, and similar traffic jumps are believed to have continued into October.

Other Oils

DOWN LESS THAN 1% VERSUS LAST YEAR.

We estimate that deliveries of "other oils" fell about 33 thousand B/D (0.8%) in October compared with year-earlier levels. The improving sales picture in the chemical industry in the second quarter did not carry through to the third quarter. Sales reportedly again fell substantially from prior-year levels. Petrochemical deliveries were some 30 thousand B/D below last year's for the first eight months of the year. While noticeable improvement occurred towards the end of that period with firming of overall economic activity, we estimate that September and October deliveries still did not exceed last year's levels.

LPG deliveries fell almost 7% from year-earlier levels in August, the latest month available. For the first eight months, however, deliveries of liquefied petroleum gases of about 1.56 million B/D were only marginally below last year. Natural gas liquids prices rose substantially in October from prior-month levels, reflecting strengthening demand. Demand for butanes has been increasing, mainly as a result of the lead reduction program. Ethane demand also appears to have been strong, with prices rising 20-25% during the past few weeks. Propane prices followed suit. In total we estimate that LPG deliveries were up about 75 thousand B/D in October.

Road oil and asphalt deliveries were almost 20 thousand B/D, or close to 5%, ahead of last year for the first eight months, apparently continuing to benefit from higher state and local budgetary allocations. Release of prior fiscal year's federal funds should by now have provided some greater impetus to asphalt and road oil sales, but there is as yet no evidence that this has occurred. We, therefore, estimate that October deliveries of asphalt rose only 20-25 thousand B/D over last year's.

Lubricants sales were up slightly in August but were still about 7% below last year for the first eight months of the year. Miscellaneous other products were also lower.

(In millions of B/D)	OCTOBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1985	1984	% Change	1985	1984	% Change
—Total domestic products supplied	15.7	15.6	0.4	15.7	15.8	(0.7)
—Motor gasoline supplied	6.7	6.7	(0.2)	6.8	6.7	1.9
—Distillate fuel oil supplied	2.9	2.8	3.1	2.8	2.8	(0.4)
—Residual fuel oil supplied	1.1	1.1	6.7	1.2	1.4	(14.1)

SUPPLY[1]

Total supply was 504 thousand B/D below last year's, a 572 thousand B/D drop in imports being offset by a 68 thousand B/D increase in total domestic supply.

Production

0.6% HIGHER THAN LAST YEAR'S LEVEL.

Total October output was about 55 thousand B/D (0.6%) above last year's level. Production at Kuparuk, proceeding at a rate more than 100 thousand B/D over last year's, accounted for about 90% of the increase in total Alaskan production. Lower 48 output fell about 60 thousand B/D, in part because of precautionary measures to minimize damage from hurricane Juan in offshore Gulf of Mexico areas and abutting southern states.

Imports

10% LOWER THAN LAST OCTOBER.

Imports, though up about 6% in October from September levels, were 572 thousand B/D below last year.

Import levels, after recovering partly from early-year declines in April and May, had started to slide again during the summer months. About 60% of the October imports decline resulted from lower product purchases. Gasoline imports (including gasoline components), ahead of last year in past months, posted a roughly 95 thousand B/D decline in October, mainly because imports of gasoline blending components last October were much higher than the year's average. Distillate imports declined almost 175 thousand B/D. Distillate prices in European markets were higher than New York Harbor spot prices for most of the month but equal to or below N.Y. Harbor levels towards month-end. Residual fuel oil imports rose by about 65 thousand B/D in October, roughly paralleling the increase in domestic residual fuel oil deliveries.

Mexico continued to hold the No. 1 spot in the ranking of oil suppliers to the U.S. in August, the latest available month, with Canada, Venezuela, Indonesia, and the United Kingdom following in that order. The same ranking applies to total eight months 1985 imports. Imports from OPEC countries represented 37% of total imports in August and 34% for the first eight months of 1985. This compares with 40% and 38% for August and eight months of 1984, respectively.

Inventories

UP 4 MILLION BARRELS FROM SEPTEMBER LEVELS.

Inventories rose about 4 million barrels in October, less than half the historical increase for this time of year. Crude oil inventories stayed about the same, but distillate stocks rose 8 million barrels. Distillate production, while exceeding 3 million barrels per day during the last two weeks of October, averaged about 2.9 million barrels per day for the month as a whole, more than 200 thousand B/D higher than last year.

Inventories of "other oils" fell about 7 million barrels in October and were about 28 million barrels below year-earlier levels. Stocks of natural gas liquids and liquefied natural gases, a substantial portion of "other oils" inventories, were about 21 million barrels lower than last year in September, the last month for which data are available. No substantial change in that year-to-year gap is expected to have occurred in October.

Overall, inventories have been lower than last year for some time as a result of lower imports. Comparing changes in individual supply and demand elements for the past four months, for example (July-through-October of 1985 versus the corresponding 1984 period), it is clear that with changes in total demand (including exports) and domestic supply volumes nearly offsetting each other, the change in inventories is essentially equal to the year-to-year decline in imports.

Operations

UTILIZATION UP 3½ PERCENTAGE POINTS.

Refinery utilization rose to more than 79% in October, a 3 1/2-percentage point increase over last year; input to distillation units was almost 270 thousand B/D higher and operable capacity down an estimated 370 thousand B/D.

An estimated 1.2 million barrels of capacity continues to be classified as idle but operable. If current input is related to capacity in actual operation, the utilization rate rises to about 86%.

(In millions of B/D)	OCTOBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1985	1984	% Change	1985	1984	% Change
—Total supply[1]	16.5	17.0	(3.0)	16.0	16.6	(3.1)
—Crude production[2]	9.0	8.9	0.6	8.9	8.9	0.6
—Crude oil imports[3,4]	3.3	3.6	(6.3)	3.0	3.2	(9.2)
—Product imports	1.7	2.0	(17.1)	1.8	2.0	(13.7)

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 490 million barrels as of October 31, 1985.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	OCTOBER			YEAR-TO-DATE		
	1985[1]	1984[2]	% Change	1985[3R]	1984[2]	% Change
Products Supplied:						
Total motor gasoline	6,715	6,729	(0.2)	6,822	6,696	1.9
Finished leaded motor gasoline*	2,366	2,636	(10.2)	2,461	2,752	(10.6)
Finished unleaded motor gasoline*	4,349	4,093	6.3	4,361	3,944	10.6
Naphtha-jet	211	222	(5.0)	217	225	(3.6)
Kerosine-jet	1,030	1,002	2.8	965	946	2.0
Distillate fuel oil	2,850	2,765	3.1	2,833	2,845	(0.4)
Residual fuel oil	1,137	1,066	6.7	1,193	1,389	(14.1)
All other oils[4]	3,940	3,973	(0.8)	3,847	3,869	(0.6)
Reclassified[5]	- 201	- 140	43.6	- 219	- 198	10.6
Total domestic products supplied	15,682	15,617	0.4	15,658	15,772	(0.7)
Exports	706	599	17.9	731	682	7.2
Total products supplied	16,388	16,216	1.1	16,389	16,454	(0.4)
Supply:						
Domestic production:						
Crude oil[6]	8,961	8,906	0.6	8,921	8,867	0.6
Natural gas liquids	1,606	1,649	(2.6)	1,613	1,623	(0.6)
Other supply[7]	944	888	6.3	809	789	2.5
Total domestic supply	11,511	11,443	0.6	11,343	11,279	0.6
Imports:						
Crude oil, total	3,340[10/]	3,565[10/]	(6.3)	2,951[10/]	3,249[10/]	(9.2)
Canadian	538	327	48.0	467	331	41.1
Other	2,782	3,188	(12.7)	2,484	2,918	(14.9)
Products, total	1,681	2,028	(17.1)	1,755	2,033	(13.7)
Residual fuel oil	328	461	14.5	493	696	(29.2)
Other	1,153	1,567	(26.4)	1,262	1,337	(5.6)
Total imports	5,021	5,593	(10.2)	4,706	5,282	(10.9)
Total supply	16,532	17,036	(3.0)	16,049	16,561	(3.1)
Stock change, all oils	+ 144	+ 820	XXXX	- 340	+ 107	XXXX
Refinery Operations						
Input to crude oil distillation units	12,418	12,151	2.2	12,087	12,237	(1.2)
Operable capacity	15,638	16,005	(2.3)	15,652	16,078	(2.6)
Refinery utilization (%)[8]	79.4[R]	75.9[R]	4.6	77.2[R]	76.1[R]	1.4
Crude oil runs	12,289	11,978	2.6	11,942	12,067	(1.0)

Stocks (millions bbls.)	1985		1984[2]	% Change from	
	Oct. 31[9]	Sept. 30[9]	Oct. 31	Previous Month	Year Ago
Crude oil[10/]	316.7	316.1	343.0	0.2	(7.7)
Unfinished oils	107.7	103.4	111.1	4.2	(3.1)
Total motor gasoline**	213.8	221.0	232.4	(3.2)	(7.1)
Finished leaded motor gasoline*	72.1	76.6	84.0	(5.9)	(14.2)
Finished unleaded motor gasoline*	108.1	110.1	109.0	(1.8)	(0.8)
Naphtha-jet	6.4	6.4	6.5	-	(1.5)
Kerosine-jet	36.5	35.8	38.2	2.0	(4.5)
Distillate fuel oil	125.3	117.4	152.2	6.7	(17.7)
Residual fuel oil	49.1	44.2	50.8	11.1	(3.3)
All other oils	144.8	151.6r/	172.9	(4.5)	(16.3)
Total all oils	1,002.3	997.9r/	1,107.1	0.4	(9.5)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-August, U.S. Department of Energy, September-October, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

THE DYNAMICS OF FUEL EFFICIENCY IMPROVEMENTS

Without the effects of improved fuel efficiency, the modest increase in gasoline demand of the last several years would have been much greater. Because of the important role this growing fleet efficiency has played in offsetting an improving economy and lower real gasoline prices, a closer examination of how new car fuel efficency improvements, car sales, scrappage, and the age distribution of vehicles interact is of great interest. This article's conclusions are based on a model of how fuel efficiency improvements work their way through the vehicle fleet as new cars enter the fleet and older cars are scrapped. Though it incorporates several simplifying assumptions, the model proves useful in illustrating the relative effects that new car sales, scrappage, and improvements in new car efficiency have had on fleet performance as a whole.

BACKGROUND

For the first 10 months of 1985, motor gasoline supplied was about 1.1 percent ahead of the prior-year period, after adjustment for the larger 1985 reporting population. This continues the trend of 1983 and 1984 gains, which were 1.3 and 1.1 percent, respectively. Without fuel-efficiency improvements, higher income and lower prices would have raised gasoline supplied an estimated 13 percent from the first 10 months of 1982 to the corresponding 1985 period. The actual increase was less than 4 percent (adjusted for reporting population). The difference is largely attributable to the net effect of improved fuel efficiency, though there is a possibility (discussed further below) that the 1985 gasoline supplied data are understated. Figure 1 traces the path of EPA sales-weighted efficiencies of new cars by model year, 1975 to 1985. It should be noted that the EPA figures are widely recognized to be overstated; in fact, EPA now adjusts them downwards by about 15 percent. Figure 2 shows the average for the passenger car fleet as a whole as estimated by the Federal Highway Administration.

A number of questions can be raised about this improvement in fleet efficiency. For example, what are the relative contributions of new car sales, scrappage, and new-car efficiency improvements in determining the upward trend of the fleet average? How important are variations in sales and scrap rates in determining the rate of fleet improvement? Specifically, what has been the impact of the large increase in new car sales since 1982? To answer these questions, a model has been developed to illustrate how all of these factors have interrelated in the past and to show what would have happened to fleet efficiency had car sales, scrap rates, or efficiencies been higher or lower in recent years.

THE MODEL

The model focuses on the passenger car fleet, which consumes about two-thirds of motor gasoline sold. It begins with the passenger car fleet as distributed by model year in 1975. It steps through, year by year, subtracting scrappage by model years and adding new car sales for the most recent model years, thus arriving at the next year's fleet composition. When the historical sales and scrappage data pictured in Figure 3 are used, the model reproduces the historical age distribution of the 1975-1984 passenger car fleet and estimates the mid-1985 fleet composition. (Historical data through 1984 are from R.L. Polk and Company.) Each year, a vehicle-weighted fuel efficiency is calculated based on EPA sales-weighted averages. Changes in assumptions about sales, scrappage, and new car efficiency can be incorporated into the model to determine how each of these factors have influenced overall fleet efficiency.

To be consistent with the fleet composition data, which are as of mid-year, the sales and scrappage data are for periods beginning July 1 and ending June 30. For alternate cases, sales and scrappage are allocated to model years in the same proportions as the historical data. Since sales data are available for the 1984-85 period, but not scrappage data, vehicle retirements for this most recent period were allocated by the same proportions and with the same scrap-to-sales ratio as occurred in 1983-84.

Though the calculated fleet efficiencies are believed to be a reliable indicator of actual trends, several points should be made. First, the EPA ratings are widely recognized as being overstated, and in fact the EPA now adjusts them downward by about 15 percent; it is unlikely that the trend, as opposed to the level, is unduly distorted, however. Second, it is assumed that scrappage within a given model year is not biased towards more- or less-efficient vehicles.

Finally, the model calculates vehicle-weighted efficiency, not mileage-weighted efficiency. To the extent that older vehicles are driven less than newer ones, and that some models within a model year may travel more miles on average than others, vehicle-weighted and mileage-weighted figures will differ.

Some price effects are not incorporated because of this weighting scheme. For example, it is likely that changes in gasoline prices would bring about shifts between low- and high- efficiency vehicles in terms of both miles driven (through changes in driving habits and through vehicle resales) and scrappage rates within model years.

RESULTS

Figure 4 shows the increasing efficiency of the passenger car fleet as calculated by the model for the base case—that is, using historical sales and scrappage rates. The gain in efficiency has been running 3 to 4 percent per year in the last five years. The estimated level of fuel efficiency parallels, at a 9 to 11 percent higher level, that estimated by the Federal Highway Administra-

tion. The model estimates a 23 percent improvement, 1975 to 1983, the same as estimated by that agency. The model allows us to analyze the dynamics of this fleet improvement further.

The analysis is divided into three parts. In the first, the overall contributions of new car sales, scrappage, and improved new-car efficiency to the fleet average are derived. In the second, the effects on fleet efficiency of variations in car sales and scrappage within historical ranges are explored. The third section applies this to a specific case by analyzing the effects of higher car sales on fleet efficiency in the last three years.

Decomposition of fleet efficiency improvements. In order to segment the effects of car sales, scrappage, and current-year efficiency improvements, the model was modified so as to add in each of these factors one at a time as it steps through each year. Figure 5 shows the result. The largest contributor to the year-to-year fleet improvements has been new car sales, accounting for about two-thirds in recent years. Most of the remainder results from scrappage. Current-year efficiency improvements contribute relatively little in the short run, since it takes many years for the inventory of vehicles to turn over. Obviously, in the long run, the entire fleet improvement has come about because of the introduction of progressively more efficient vehicles. But, in the short run, the effect of already-achieved efficiencies working their way through the fleet has been the predominant source of year-to-year fleet efficiency improvement.

It is interesting to note that scrappage has gained an increasing share of the fleet efficiency improvements over the years. Figure 6 shows that the gap between the respective efficiencies of scrapped vehicles and the remaining fleet has grown, so that the impact of removing these cars from the fleet has grown as well. The figure also shows that the fleet average is still well below that of the latest model years. .

Effects of variations in sales and scrappage. Over the last ten years, annual additions to the passenger car fleet have ranged from 8 million vehicles in 1981-82 to 11 million in 1978-79 (split-year basis), while scrap rates have ranged from 6.2 million in 1983-84 to 9.3 million in 1978-79. How large an impact can variations of this magnitude have? To find out, the model was run substituting these high and low values for 1984-85 sales and scrappage, respectively. The results show that the effect of these extreme variations is not large over the space of a year. An increase in new car sales from 8 to 11 million vehicles would have increased overall fleet efficiency by 0.1 miles per gallon. An increase in scrappage from 6.2 to 9.3 million cars would have had a similar effect. Both effects combined would have increased the fleet efficiency by only about 0.25 mpg, or a little more than 1 percent. Because of partially offsetting increases in miles travelled stemming from the reduction in cost per mile, the effect on gasoline demand would be less than this. Thus, though total sales and scrappage account for much of the fleet's efficiency gains in the short run, the short-run effects of even extreme variations in sales and scrappage may be noticeable but not large.

Effects of the sales increase since 1981-82. The effects of sales and scrappage variations might be expected to be larger over a longer time period. Has the 33 percent sales gain over the last three years had a measurable effect? To answer this question, the historical base case was compared to one in which sales and scrappage remained at their 1981-82 levels of 8 million and 7 million per year, respectively. This alternate case reduced mid-1985 fleet efficiency by 0.2 mpg, or about 1 percent, from the base case level. Again, even over a longer period, increased sales levels such as those experienced over the last three years have a noticeable but not large effect. This result, nevertheless, illustrates a seemingly perverse effect—that an improving economy, while enhancing gasoline demand through increased miles travelled and a growing vehicle fleet, has dampened it as well through increases in the average fleet efficiency.

IMPLICATIONS FOR GASOLINE DEMAND

For the first 10 months of 1985, data for motor gasoline supplied, after adjustment for the change in reporting population, show a gain of approximately 3½ percent over the same period of 1982. How does this figure compare with what would be indicated by economic data, price changes, and the trends in fleet efficiency estimated in this paper?

Over this span, real income rose about 13 percent while gasoline prices fell 16 percent in real terms. These factors are estimated to have had a positive influence on gasoline demand of about 13 percent. The model estimates an improvement in passenger car efficiency of a little less than 12 percent over this period; however, changes in truck efficiency must also be accounted for. Truck fleet efficiency, according to Federal Highway Administration data, showed little change in the most recent years available. If gasoline-powered trucks, which consume one-third of gasoline sales, are assumed to have shown minimal improvement in average efficiency in the past three years, the car and truck combined efficiency improvement falls to about 8 percent. After accounting for the partially offsetting increase in miles travelled because of the effective reduction in cost per mile, the net downward influence on gasoline supplied would be about 6 percent. The combined influence of these upward and downward forces indicates a 6½ percent increase in demand, rather than the 3½ percent reported above. The discrepancy amounts to about 175 MBD.

Liberalizing the assumption on truck efficiency improvements to half of that experienced by passenger cars yields an estimated 5 percent increase in gasoline demand, or a discrepancy from Department of Energy (DOE) data of about 80 MBD. Though these estimates are admittedly imprecise, they do indicate the possibility that DOE data are not capturing all gasoline consumption. Further analysis of fleet efficiency changes and economic data suggest that this difference began to be significant beginning with 1984, but did not deteriorate further in 1985. In fact, DOE added about 50 MBD in new respondents in 1985, so the 80-175 MBD discrepancy above is reduced to roughly 30 to 125 MBD. The possibility that DOE data have been understated is also suggested by a comparison of Federal Highway Administration data on gasoline sales with those of DOE. While in the previous three years DOE's figures have averaged about 185 MBD lower, in 1984 the gap increased to about 300 MBD.

An analysis of the 1984-85 change in gasoline demand, similar to that above, indicates no further deterioration, and perhaps an improvement, in DOE gasoline supplied data. The upward influence of price and income is estimated to have been about 160 MBD, while improved efficiency's net downward effect is estimated to be 140 to 180 MBD. On net, little change in gasoline demand is indicated, compared to a roughly 75 MBD increase based on DOE data. The latter figure excludes the effects of a known improvement in coverage — DOE's inclusion of new respondents in early 1985. This suggests that an improvement in coverage, in addition to the inclusion of these new respondents, may well have occurred compared to 1984.

CONCLUSION

The model of the U.S. car fleet described here shows that the major short-run contribution to fleet efficiency improvement in recent years has been vehicle turnover rather than efficiency improvements for the most recent model year. Large variations in car sales and scrappage have small but noticeable effects on a year-to-year basis, and the contribution of higher car sales in the past three years to improved fleet efficiency has not been large. The model, combined with other data, suggests that DOE gasoline supplied data may be understated.

Figure 1

EPA SALES-WEIGHTED AVERAGE FUEL EFFICIENCY FOR PASSENGER CARS

Source: Environmental Protection Agency

Figure 2

AVERAGE FLEET FUEL EFFICIENCY, PASSENGER CARS --FEDERAL HIGHWAY ADMINISTRATION

Source: Federal Highway Administration

Figure 3

REGISTRATIONS OF NEW CARS AND SCRAPPAGE

Note: figures are from mid-year to mid-year beginning with 1975-76
Sources: 1975-76 to 1983-84, R. L. Polk, 1984-85 estimated

Figure 4

ESTIMATED PASSENGER CAR FLEET EFFICIENCY (EPA BASIS)

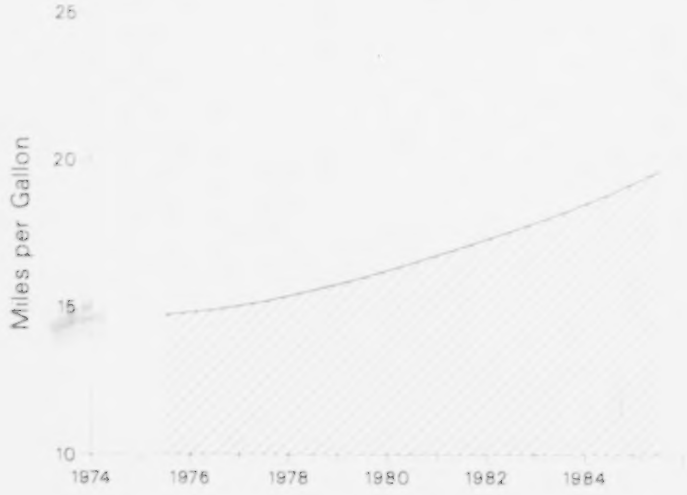

Figure 5

SEGMENTATION OF YEAR-TO-YEAR FLEET EFFICIENCY IMPROVEMENTS

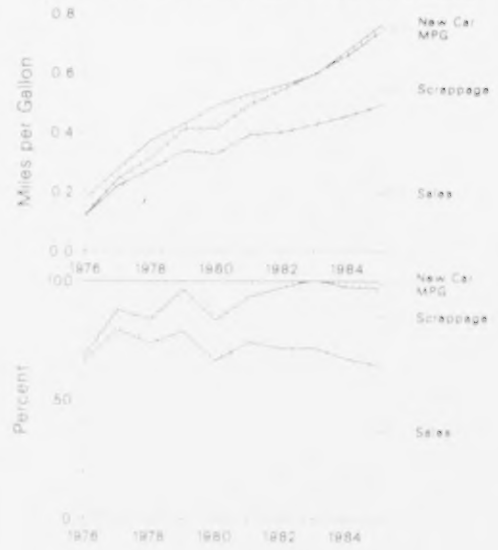

Figure 6

RELATIVE EFFICIENCIES OF NEW CARS, EXISTING FLEET, AND SCRAPPED VEHICLES

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American Petroleum Institute
1220 L Street, Northwest
Washington, D.C. 20005

Monthly Statistical Report

Prepared by the Statistics Department

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NOVEMBER 1985

ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Although they still remain below last year's level for the first eleven months, domestic petroleum deliveries increased 238 thousand B/D (1.5%) in November. As in most of 1985, gasoline and kerosine jet fuel deliveries in November were higher than last year, while recent strength in distillate demand has brought distillate deliveries on a cumulative basis to about 1984's level. Thus, it is the continued decline in residual fuel oil demand that has caused the overall decline in domestic deliveries, and year-to-date results excluding that product reflect continued improvement, though slight, in delivery levels. But residual fuel deliveries have, since mid-year, experienced generally-moderating rates of decline; for the past two months combined, in fact, a slight year-to-year gain was experienced. It is this change in residual fuel oil deliveries that is largely responsible for the November increase in total petroleum deliveries.

Total U.S. crude oil production suffered a 78 thousand B/D decline in November, though Alaskan production was up slightly. In contrast to earlier months of 1985, the November increase in inventories of about six million barrels was about normal for this time of year and about the same as last year. As a direct consequence, since domestic supply was up somewhat less than the increase in total products supplied, imports increased slightly from year-ago levels.

PRODUCTS SUPPLIED[1]

Gasoline

DELIVERIES ONLY MINIMALLY ABOVE LAST YEAR'S LEVEL.

Gasoline deliveries rose 16 thousand B/D (0.2%) compared with year-earlier levels, a rate of increase somewhat below those experienced over the past several months. When adjusted for the estimated 50 thousand B/D increase resulting from blenders' volume not part of last year's reporting universe, moreover, a year-to-year decrease of about 34 thousand B/D (0.5%) results.

Gasoline prices rose about a penny. Adjusted for inflation, gasoline prices are slightly below last November's and more than 30% below the March 1981 high. Estimated real disposable personal income was down slightly in the third quarter compared with the first half level. The recent lack of buoyancy in gasoline demand, given little change in gasoline prices, is likely related to unimpressive performance of this economic indicator.

Unleaded's share of the total gasoline market rose to almost 67%, the highest level ever reached. This share is almost two percentage points higher than October's level and roughly 4 percentage points above the year-earlier share.

Distillates

UP 2% OVER LAST NOVEMBER'S LEVEL.

Distillate deliveries rose 48 thousand B/D (1.7%) compared with last November's. Weather was roughly 10% warmer than last year, lowering heating oil demand by an estimated 60 thousand B/D. Rail and truck traffic are estimated to have experienced only minor year-to-year changes in November, likely too insignificant to have caused a meaningful impact on distillate deliveries. As a result, we believe that filling of non-primary storage — by perhaps 100 thousand B/D more than last year — was the major reason for November's distillate increase.

Residual Fuel Oil

ABOUT 2% BELOW LAST YEAR.

Residual fuel oil deliveries were 25 thousand B/D (1.8%) lower than last November's and, for the year to date, were 192 thousand B/D, almost 14%, below the corresponding period last year.

Resid prices recovered somewhat in November; in October, the increase in resid deliveries is believed to have been in part the result of lower prices for residual fuel oil. Natural gas prices, on the other hand, generally continued their overall decline in November, often-direction-setting prices on spot markets reaching levels some 30% below early-1985's. These developments would normally have had a rather unfavorable impact on

resid demand. However, uncertainty prevailing in natural gas markets since the institution of new regulations on November 1st, and the difficulty reportedly experienced by some companies in obtaining transported supplies, seem to have resulted in some dual-fuel-capability users' energy needs being channeled into residual fuel oil markets. This factor is likely to have made itself particularly felt in the industrial sector of the natural gas market. As a result of that sector's likely swing to resid, November's overall year-to-year decline in deliveries was minimal.

Despite the fact that electricity generation was up about 2%, residual fuel oil purchases by electric utilities in November was likely still below year-earlier levels by 75-100 thousand B/D. This year-to-year decline is a significantly smaller decrease than the 150-200 thousand B/D experienced several months ago, with the difference primarily attributable to the more favorable price relationships in recent months, although resid prices rose somewhat in November.

While relative price trends have often resulted in short-to-intermediate-term fluctuations in the electric utilities' resid purchases, over the longer term petroleum (mainly residual fuel oil) has continued to lose market share as an energy source in that sector. For eight months of 1985, for example, its share fell about one percentage point from a year earlier to just over 4%, while natural gas held on to a roughly 12% share. A major reason for petroleum's downtrend is the continued rise in coal's share, an energy input that captured almost 55% of the electric utility market for the eight-month period, more than one percentage point above the similar 1984 period and about 2½ percentage points higher than for the corresponding period two years ago. Higher use of nuclear fuel also raised that energy source's share by more than two percentage points from year-earlier levels — to over 15% of total input — and roughly three percentage points, when compared with the corresponding 1983 period.

Kerosine Jet Fuel

UP 13 %.

Kerosine jet fuel deliveries rose 124 thousand (13.4%) B/D over last November's level, again exceeding the 1 million B/D mark, but led last year's delivery levels for the year to date by only 2½%.

"Miles flown" levels, for the 9 months for which data are available, on average were about 4% ahead of the corresponding period in 1984, though the third quarter apparently experienced larger increases. Recent fare incentives are likely to have pushed air traffic to even higher levels since then.

Cumulatively, there continues to be a gap of about two percentage points between the rate of "miles flown" increases and the upward rise in kerosine jet fuel demand, a reflection of persistent emphasis on fuel efficiency improvements.

Other Oils

UP AN ESTIMATED 4% OVER LAST NOVEMBER'S LEVEL.

Deliveries of "other oils" are estimated to have exceeded last year's by about 151 thousand B/D (4.1%) in November.

With overall economic activity on an uptrend during the third quarter, strength may have spread to the chemical sector, though initial sales reports had indicated some continued year-to-year deterioration. We expect deliveries of petrochemicals, up more than 20% over last year in September, to have experienced continued increases during the October/November period over last year's relatively low levels, perhaps on the order of 50 thousand B/D.

Demand for liquefied petroleum gases strengthened in November, and prices, already up considerably from earlier-month levels at the beginning of November, continued to rise. Increases appear to have been especially pronounced in demand for propane, which benefited from its versatile use as a space heating fuel, in chemical applications, and in crop-drying in this year's drawn-out season. Propane deliveries were almost 9% higher in September than last year, and year-to-year increases are likely to have continued into November. While November was warmer than normal for the country as a whole, cold temperatures prevailed in most of the regions where propane is used as a heating fuel. Butane, up more than 20% in September and 12% for the first 9 months of the year to date, may have been similarly affected; deliveries in November are estimated to have been up 15-20% over last year. As a result of increased demand for both propane and butane, overall deliveries of liquefied petroleum gases were up almost 100 thousand B/D in September compared with last year and are likely to have experienced continued improvement into November. Thus, LPG increases are estimated to have been responsible for about two-thirds of the estimated total increase in "other oils" deliveries.

Road oil and asphalt demand was up about 4% for the first 9 months of the year; one would have expected the previously-delayed release of federal fund allocations for highway construction and repair earlier this year to have lifted existing demand more substantially, however. The recent allocation of current fiscal year funds may have induced some additional buying, and the November delivery increase may indeed have been larger than the 4% increase previously experienced.

Lubricant sales were down about 25 thousand B/D (16%) in September and roughly 15 thousand B/D for the year-to-date, and a 15-20 thousand B/D decrease is estimated to have occurred in November.

(In millions of B/D)	NOVEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1985	1984	% Change	1985	1984	% Change
—Total domestic products supplied	15.9	15.6	1.5	15.6	15.8	(0.8)
—Motor gasoline supplied	6.8	6.8	0.2	6.8	6.7	1.5
—Distillate fuel oil supplied	2.9	2.8	1.7	2.8	2.8	(0.4)
—Residual fuel oil supplied	1.3	1.4	(1.8)	1.2	1.4	(13.9)

SUPPLY [1]

Total supply was 134 thousand B/D (0.6%) above last year's because of higher total domestic supply (98 thousand B/D) and a slight increase in imports (36 thousand B/D).

Production

DOWN ABOUT 1%.

Domestic crude oil production fell 78 thousand B/D (0.9%) in November, in good part because of hurricane-related disruptions in the lower 48; a small net increase in Alaskan output was more than offset by a decrease in lower 48 production. Output in Alaska was helped by start of production at Milne Point and higher Kuparuk production, but Cook Inlet production is estimated to have fallen sizably.

Imports

ROUGHLY 1% ABOVE LAST YEAR'S.

Total imports were about 36 thousand B/D (0.7%) higher than last year. Gasoline imports (including blending components) rose an estimated 100 thousand B/D over year-earlier levels, but, for the year to date, these imports are up only 50-60 thousand B/D. November distillate imports stayed at the roughly 315 thousand B/D level experienced last year, but, for the year to date, are about 85 thousand B/D below year-earlier levels.

Total imports have been lower this year than last as a direct consequence of the difference between the inventory drawdown in 1985 and the increase in 1984. However, with inventory behavior this November essentially the same as last, November's total petroleum imports increased as a result of the increase in demand.

Mexico continued to be the top petroleum supplier to the U.S. in September, followed by Venezuela, Canada, the United Kingdom, and Nigeria. OPEC's share of total imports has been in the 36-37% range for the past several months reported, some 3-4 percentage points below year-earlier levels.

Inventories

ROSE IN LINE WITH HISTORICAL EXPERIENCE.

Total inventories rose about 6 million barrels from October levels, about in line with historical inventory movement at this time of year. Distillate inventories rose almost 13 million barrels in November, several times the increase usually experienced in that month, but inventories of "other oils" fell substantially. November gasoline inventories fell about 1 million barrels from October levels; they normally rise some 5-6 million barrels during November.

Inventories of natural gas liquids continued to fall in October, mainly as a result of a decline in propane inventories. With demand for most liquefied petroleum gases estimated to be higher in November than last year, some year-to-year declines in inventories may have continued, though flow from the damaged Mont Belvieu facility reduced the amount of product moved during the month.

Operations

UTILIZATION RATE EXCEEDED 80%.

With input to crude oil distillation units rising about 270 thousand B/D and operable capacity down almost 240 thousand B/D, utilization rose about 3 percentage points to more than 80%. If the estimated 1.2 million B/D of idle but operable capacity is excluded from the computation, the rate of utilization rises to almost 87%.

With distillate output topping 3 million barrels per day in three out of four of November's full-week reporting periods—and production during the last full reporting week of that month at almost 3.3 million B/D—total distillate output averaged about 3.1 million B/D in November, roughly 275 thousand B/D higher than last year.

(In millions of B/D)	NOVEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1985	1984	% Change	1985	1984	% Change
—Total supply	16.8	16.7	0.8	16.1	16.6	(2.7)
—Crude production[2]	8.9	9.0	(0.9)	8.9	8.9	0.3
—Crude oil imports[3,4]	3.5	3.4	3.7	3.0	3.3	(7.8)
—Product imports	1.9	2.0	(4.3)	1.8	2.0	(12.5)

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 491 million barrels as of November 30, 1985.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	NOVEMBER			YEAR-TO-DATE		
	1985[1]	1984[2]	% Change	1985[3R]	1984[2]	% Change
Products Supplied						
Total motor gasoline	6,816	6,800	0.2	6,806	6,705	1.5
Finished leaded motor gasoline*	2,276	2,555	(10.9)	2,433	2,734	(11.0)
Finished unleaded motor gasoline*	4,540	4,245	6.9	4,373	3,971	10.1
Naphtha-jet	215	234	(8.0)	215	226	(4.9)
Kerosine-jet	1,048	924	13.4	968	944	2.5
Distillate fuel oil	2,853	2,837	1.7	2,833	2,843	(0.4)
Residual fuel oil	1,329	1,351	(1.6)	1,194	1,386	(13.9)
All other oils[4]	3,536	3,705	4.1	3,859	3,855	0.1
Reclassified[5]	- 221	- 210	(5.3)	- 235	- 199	18.1
Total domestic products supplied	15,816	15,847	(.2)	15,640	15,760	(0.8)
Exports	794	834	(10.0)	743	697	6.6
Total products supplied	16,606	16,681	0.8	16,383	16,457	(0.4)
Supply						
Domestic production						
Crude oil[6]	8,618	8,879	(2.9)	8,902	8,877	0.3
Natural gas liquids	1,584	1,665	(4.8)	1,609	1,628	(1.2)
Other supply	1,147	887	29.3	830	777	6.8
Total domestic supply	11,349	11,431	(0.7)	11,340	11,282	0.6
Imports	10/	10/		10/	10/	
Crude oil, total	3,677	3,864	(5)	3,006	3,259	(7.8)
Canadian	496	349	42.1	476	335	42.1
Other	3,181	3,515	(9.5)	2,530	2,924	(13.5)
Products, total	1,581	1,884	(16.1)	1,778	2,031	(12.5)
Residual fuel oil	473	661	(28.4)	491	686	(28.4)
Other	1,108	1,223	(9.4)	1,287	1,345	(4.3)
Total imports	5,258	5,748	(8.5)	4,784	5,290	(9.6)
Total supply	16,607	17,179	(3.3)	16,124	16,572	(2.7)
Stock change, all oils	+ 1	- 498	XXXX	+ 259	+ 115	XXXX
Refinery Operations						
Input to crude oil distillation units	12,373	12,236	1.1	12,427	12,239	(0.9)
Operable capacity	15,618	15,835	(1.4)	15,665	16,060	(2.5)
Refinery utilization (%)[8]	80.1	77.8	3.0	77.6	76.2	1.6
Crude oil runs	12,353	12,198	1.3	11,978	12,071	(0.8)

Stocks (millions bbls.)	1985		1984[7]	% Change from	
				Previous Month	Year Ago
Crude oil[10]	340.0	351.4	369.0		
Unfinished oils	110.8	107.3	113.8	0.4	(7.8)
Total motor gasoline**	218.5	218.0	250.1	1.6	4.0
Finished leaded motor gasoline*	99.1	94.1	98.4	(0.6)	(10.4)
Finished unleaded motor gasoline*	107.4	108.1	140.0	1.4	(17.3)
Naphtha-jet	6.1	6.4	6.5	(0.6)	(2.5)
Kerosine-jet	38.1	36.3	39.4	(1.6)	(3.1)
Distillate fuel oil	130.9	126.9	161.0	4.4	(9.8)
Residual fuel oil	85.4	89.0	87.0	3.2	(14.5)
All other oils	130.3	128.5	171.1	(4.3)	0.9
Total all oils	1,065.1	1,065.1	1,113.9	0.0	(12.3)

1. Based on API estimated data corrected for monthly bias.
2. Source: U.S. Department of Energy.
3. Source: January-September, U.S. Department of Energy (October-November, API).
4. Includes crude losses.
5. Beginning with January 1985, U.S. Department of Energy began using a new data collection system which necessitated a method to ascertain the amount of product reclassified during the processing phase. Similar historical figures could not be developed. Reclassified figures are subtracted from total domestic products supplied.
6. Includes lease condensate.
7. Includes Unaccounted for crude oil, Refinery input or other transactions and Processing gain.
8. Represents "Input to crude oil distillation units" as a percent of "Operable capacity".
9. Derived by annualizing API weekly crude data.
10. Data do not include oil reported for the Strategic Petroleum Reserve (SPR) but crude oil stocks held in the SPR.
R. Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

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ESTIMATED U.S. PETROLEUM BALANCE
SUMMARY

TOTAL ENERGY

Estimated total energy consumption in 1985 changed little from 1984, following that year's trend-reversing 5 percent increase. Slower economic growth, at about a third of 1984's rate, and continued efficiency gains (Exhibit I) combined to hold 1985's energy use at roughly the prior year's level. While coal consumption rose an estimated 4 percent, natural gas use fell at about the same rate. Petroleum declined slightly. The continued growth of coal use over the last several years, combined with a decline for natural gas, has brought coal's 1985 market share, at 24 percent, to a level equal to that of natural gas. Coal has not matched gas in overall market share for nearly 30 years. Meanwhile, petroleum's share remained at about 42% and "other" energy sources (primarily hydro and nuclear) increased their share slightly.

TABLE 1

ENERGY CONSUMPTION BY TYPE
(Annual Quadrillion BTU)

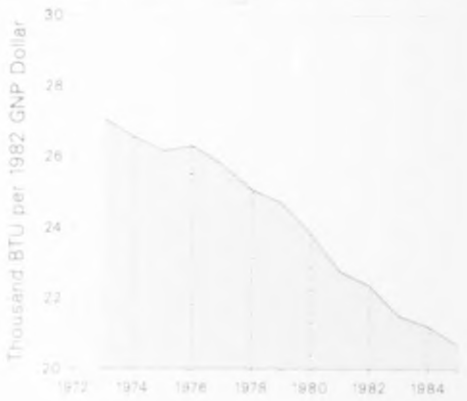
	Coal	Natural Gas	Oil	Other	Total
1984	17.1	18.5	31.0	7.5	74.1
1985	17.8	17.7	30.9	7.6	74.0
Change	0.7	-0.8	-0.1	0.1	-0.1
Percentage Change	4.0	-4.3	-0.5	1.5	-0.2
Percentage Share 1984	23.0	25.0	41.9	10.1	100.0
Percentage Share 1985	24.0	24.0	41.8	10.3	100.0
Percentage Point Change In Market Share	1.0	1.0	-0.1	0.2	
Year-to-year percentage change in BTU's by half-year					
First Half	3.6	5.5	-2.1	0.1	-1.5
Second Half	4.4	-2.9	1.3	3.0	1.2

Note: Figures rounded independently; calculations based on unrounded data. Because 1984 was a leap year, comparisons will differ from those computed on a daily basis.

The ratio of energy consumed per dollar of gross national product, based on the Commerce Department's recently-revised data, fell about 2½ percent in 1985 to about 20.7 thousand BTU per 1982 GNP dollar (Exhibit I). This decline is within the range of recent years' experience.

EXHIBIT I

ENERGY CONSUMED PER DOLLAR OF REAL GNP



Sources: Department of Energy, Department of Commerce, API estimates

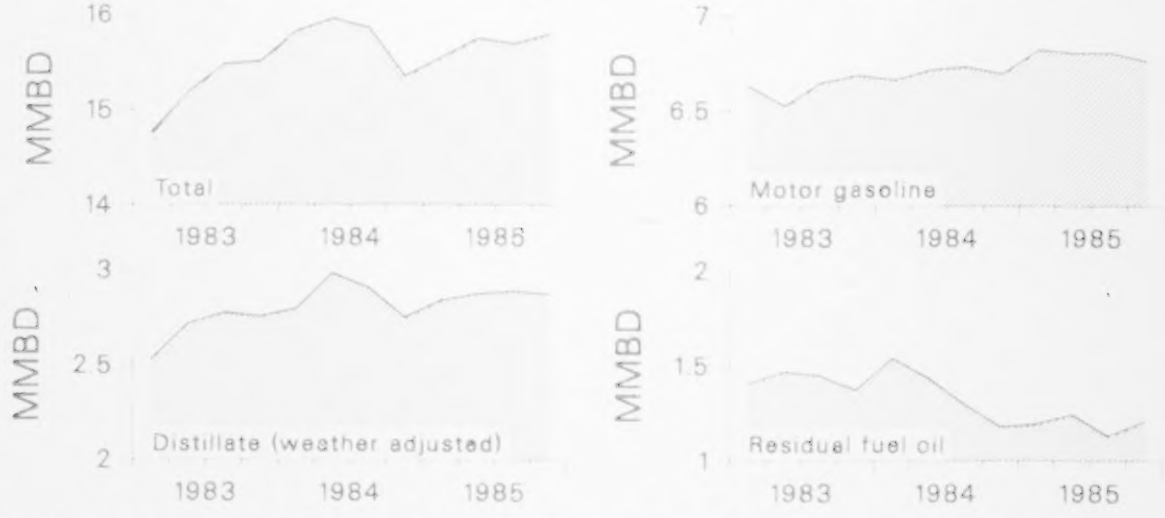
PETROLEUM PRODUCTS

ABOUT THE SAME DELIVERIES LEVEL IN 1985 AS IN 1984.

Delivery levels, down in the early part of the year, experienced gradual improvements as the year progressed, achieving an estimated 423 thousand B/D (2.7%) year-to-year increase in the fourth quarter. Total petroleum deliveries for 1985 were only minimally changed from prior-year levels (down 30 thousand B/D—0.2%). The total deliveries comparison, however, obscures the fact that, were it not for continued losses in residual fuel oil deliveries, domestic deliveries, paced by rising light products demand, would have been about 1% greater in 1985 than during the previous calendar year.

EXHIBIT II

SEASONALLY ADJUSTED PRODUCT SUPPLIED



Sources: Department of Energy, American Petroleum Institute

As Exhibit II shows, the magnitude and timing of year-to-year changes differed substantially between major products. Gasoline deliveries were ahead of last year for most of 1985. Distillate deliveries, with gains in rail and truck traffic early in the year eventually giving way to traffic decreases, experienced only a slight gain for the year as a whole, mainly as a result of a much colder December. Residual fuel oil deliveries, down year-to-year during the first three quarters of the year, though at progressively lessening rates, rose slightly during the last quarter. The increase was mainly the result of a sharp increase in December deliveries as prices weakened again and some users of natural gas switched to resid to avoid transportation problems. Kerosine jet fuel deliveries (not included in the Exhibit) also advanced consistently.

Crude production, largely because of higher output in Alaska, rose slightly in 1985 over prior-year levels. The 0.3 percentage

point increase, however, trailed 1984's more-than-two percentage point advance. As inventories stabilized at lower levels, stocks thus freed moved into the supply stream. As a consequence, with total petroleum demand about the same as last year, the need for imports was reduced, and the imports level fell roughly 7% for the year, despite a more-than-800 thousand B/D increase in December import levels.

PRODUCTS SUPPLIED[1]

Gasoline

1985 DELIVERIES ROSE 1.6% OVER LAST YEAR'S.

Deliveries of motor gasoline were 18 thousand B/D (0.3%) greater than last year in December and for the fourth quarter rose 73 thousand B/D (1.1%). Recent increases have been smaller than earlier in the year, as prices stayed relatively stable while real disposable income increased at a lower rate in the second half than in the first half of 1985. For the year as a whole, however, gasoline deliveries scored a 109 thousand B/D, 1.6% gain over 1984 levels. The increase is reduced to roughly the same 1% rate as last year, however, when the 40-50 thousand B/D volume added in 1985 as a result of greater blender volume reporting than in 1984 is deducted.

Gasoline prices ended the year minimally ahead of last December's in absolute terms, but some 3% below last year when adjusted for inflation. The lead phasedown, which reduced permissible lead content in leaded gasoline in stages in 1985, increased refiners' cost of maintaining octane levels. Nevertheless, the gap between prices of leaded and unleaded gasolines at the pump, at least until recently, experienced little change; some gradual narrowing did occur, however, at wholesale levels.

Exhibit III incorporates the trend of motor gasoline supplied, real disposable personal income, and real retail prices over the past decade. While the rapid, substantial price increases of the late seventies had a far greater effect on gasoline demand than all other factors, rising real disposable income did provide some offset. Prices have been on a downtrend since early 1981 and personal income has continued to rise, exerting upward pressure on gasoline demand. However, as downsizing of automobiles and other factors improved mileage performance, the car efficiency factor started to play a prominent counteracting role in determining gasoline demand. The overall effect of the interplay of these elements has been to hold increases in gasoline demand during the past few years to a minimum. From the 1981 average, for example, gasoline prices have fallen about 26%, on an inflation-adjusted basis, and real disposable personal income has risen almost 12%. The impact of these two factors together should have raised gasoline demand by 15-16%. The combination of scrappage of old cars and their replacement with newer, more fuel-efficient cars largely offset these demand-increasing factors, however, so that gasoline demand actually rose only 3% during the four-year period.

EXHIBIT III

SEASONALLY ADJUSTED MOTOR GASOLINE SUPPLIED
REAL GASOLINE PRICES, AND REAL DISPOSABLE PERSONAL INCOME

Sources: Department of Energy, American Petroleum Institute, Bureau of Labor Statistics, Department of Commerce

EXHIBIT IV

THE CONTRIBUTIONS OF NEW CAR SALES AND SCRAPPAGE TO YEAR-TO-YEAR FLEET EFFICIENCY IMPROVEMENTS

Source: API estimates

Exhibit IV separates the differing effects of scrappage and new car sales on fleet efficiency improvements. The impact of the latter has been by far the larger of the two factors over the past decade and, for 1985, accounted, we estimate, for about two-thirds of the total efficiency improvement.

Unleaded gasoline continued to increase market penetration during 1985, and, by December, had attained a more-than-68% share of the motor gasoline market, almost five percentage points greater than last December's.

Distillates

UP ABOUT 1% YEAR-TO-YEAR.

Distillate deliveries rose 333 thousand B/D (11.6%) in December; about three-quarters of the increase is estimated to be the result of weather some 35% colder than last year, the remainder likely increased filling of non-primary storage. The substantial December increase helped to

convert the previously-existing rough tie in 11-month delivery levels into a slight full-year increase (26 thousand B/D—0.9%), attributable in part to the weather factor. For the year as a whole, weather was an estimated 2% colder in 1985 than in 1984, adding perhaps 10-20 thousand B/D to distillate demand. Rail and truck traffic levels, where increases prevailed during the first part of 1985, gradually moderated later in the year, eventually giving way to lower year-to-year levels. As the sectoral results in Table 2 below indicate, for 1985 as a whole we estimate truck and rail traffic to have been only slightly changed from prior-year levels, and the combined impact on distillate deliveries to have been minimal. Other sectors of the distillate market also underwent only minor changes.

TABLE 2
ESTIMATED DISTILLATE DELIVERIES BY SECTOR (MBD)

Sector	1984	1985	% Change
Residential and Commercial	769	783	1.8
Industrial	153	155	1.3
Farm	193	197	2.1
Oil Companies	59	57	-3.4
Utilities	45	42	-6.7
Railroad	225	218	-3.1
Bunkers	110	107	-2.7
On-Highway	1,093	1,111	1.6
Military	45	47	4.4
Off-Highway	109	113	3.7
Miscellaneous	44	42	-4.5
Totals	2,845	2,871	0.9

Sources: DOE - 1984 and totals only 10 mos. 1985
API - Nov./Dec. data and 1985 Sectoral Breakdown

Residual Fuel Oil

DOWN ALMOST 13% IN 1985 VERSUS 1984.

Despite a 157 thousand B/D (13.2%) year-to-year deliveries increase in December, total 1985 deliveries fell 173 thousand B/D, almost 13%, compared with the prior year's level, continuing an unbroken string of declines since their 1977 high. However, in 1985, year-to-year percentage decreases grew progressively smaller during the first three quarters of the year and posted a better-than-2% advance in the fourth quarter.

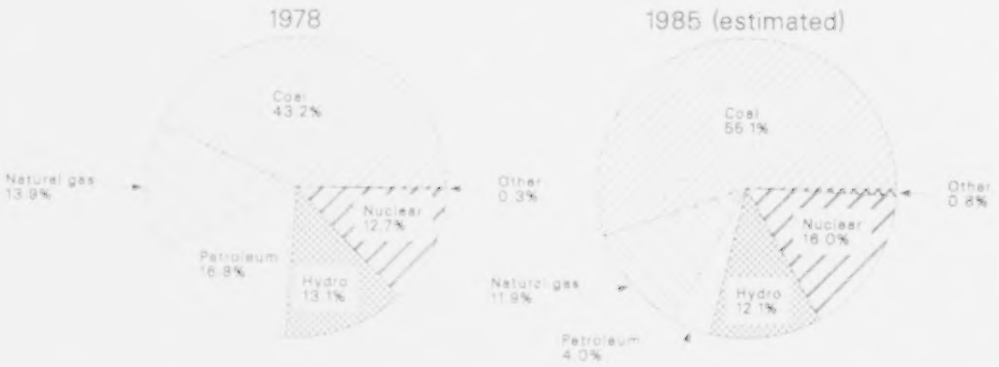
Relatively tight resid supply on world markets, as a result of the U.K. coal strike, kept prices at relatively high levels until March, but prices on direction-setting spot markets then started to slide, reaching a level some 25% below early-1985 prices by midyear. While recovering part of their loss in late summer, they have recently again been close to midyear lows. Natural gas prices have been on a downtrend all year, and, while the decline was more gradual, spot price levels towards year-end were some 25% below those prevailing early in the year.

While spot volume is not believed to be large, it is often the level and direction of spot prices that tend to influence dual-capacity users' short-term fuel choices. During the last two months, however, short-term deliverability also played a part. Some users had to resort to the purchase of residual fuel oil because of uncertainty as to the availability of natural gas transportation related to new natural gas regulations which became effective November 1st. These problems appear to have particularly affected the industrial sector, where dual-fuel capability is widespread. As a result, we expect that sector to have been largely responsible for the improving performance of resid delivery levels in the fourth quarter, with recent-month improvements in deliveries helping to reduce the sector's total year-to-year loss to about 45 thousand B/D.

In the electric utility sector, year-to-year losses early in 1985 later lessened, as resid prices fell, and a year-to-year increase was achieved in October, the latest month for which data are available. We estimate, however, that, for the year as a whole, the electric utilities' resid purchases, despite a roughly 2% increase in total electricity generation, still were some 120 thousand B/D below year-earlier levels, a decrease representing some two-thirds of the total decline in resid deliveries.

EXHIBIT V

SHARES OF ENERGY INPUTS TO ELECTRIC UTILITIES 1978 AND 1985



Sources: Department of Energy, API estimates

Longer term, it is the continued rise in coal and nuclear fuel use at electric utilities that is having a major influence on resid use. The change in shares of energy input sources between 1978 and 1985 is shown in Exhibit V. During the period, total input for electricity generation grew by an estimated 12%. Coal and nuclear fuel's shares of the market rose by 12 and 3 percentage points to 55% and 16%, respectively, while petroleum (mainly residual fuel oil) and natural gas input fell almost 13 and 2 percentage points to 4% and 12%, respectively.

Only a minor change is believed to have occurred in 1985 bunker fuel deliveries; an estimated 10 thousand B/D average decrease in deliveries was caused mainly by lower purchases in late-summer months, at a time when total U.S. exports experienced sizable year-to-year decreases.

Kerosine Jet Fuel

UP MORE THAN 3% IN 1985 OVER 1984 DELIVERY LEVELS.

Deliveries of kerosine jet fuel advanced in December, continuing a trend that has prevailed for most of the year. During each month in the fourth quarter, deliveries exceeded one million barrels per day, reaching a high of almost 1.2 million barrels per day in December, up 12% over year-earlier levels.

For the year as a whole, however, kerosine jet fuel deliveries advanced only 32 thousand B/D (3.4%). Year-to-year increases in "miles flown" levels, in the 4-5% range early in the year, receded toward midyear but have, of late, again been rising at a substantial rate. We estimate that air travel rose more than 4% for 1985 as a whole, a rate of increase about one percentage point greater than the increase in fuel deliveries. A similar percentage point difference between kerosine jet fuel usage and "miles flown" levels has, on average, persisted for the better part of the last two years, as the trendlines of deseasonalized jet fuel deliveries and "miles flown" in Exhibit VI indicate.

EXHIBIT VI

SEASONALLY ADJUSTED KEROSINE JET FUEL SUPPLIED AND REVENUE MILES FLOWN

Sources: Department of Energy, American Petroleum Institute, Civil Aeronautics Board, API estimates

Other Oils

UP MORE THAN 1% FOR 1985 AS A WHOLE

December deliveries are estimated to have been about 280 thousand B/D (7.9%) greater than last year. An increase of about 5% occurred in the last quarter of the year, but for the year as a whole, deliveries were only about 43 thousand B/D (1.1%) greater than in 1984.

A portion of the year-to-year increase is likely attributable to accelerating activity in the chemical industry. The industry's sales, reportedly not strong early in the year, are believed to have been on the increase in later months.

Petrochemical feedstock deliveries, which had risen strongly late in the third quarter, continued to rise in October, and, with indications of continuing strength in overall economic activity, are believed to have continued at higher levels in November and December. As a result, delivery levels, down about 17 thousand B/D for the first ten months of 1985 versus the corresponding 1984 period, are estimated to have incurred a somewhat reduced decrease for the year as a whole, perhaps on the order of 10-15 thousand B/D. In the liquefied petroleum gases category, butane deliveries rose during the first 10 months of 1985, mainly because of increased refining use; propane deliveries also increased. Both products are estimated to have also experienced strong increased year-to-year demand in the last two months of the year. Ethane demand for 1985, despite a demand surge in late months, is estimated to haved declined about 10 thousand B/D. For the year overall, total liquefied petroleum product deliveries, up about 20 thousand B/D for the first 10 months mainly as a result of increasing delivery levels since midyear, are estimated to have experienced a roughly-30 thousand B/D increase.

Asphalt and road oil deliveries rose about 15 thousand B/D for the first 10 months of the year, or roughly 3%, compared with the same period last year. Based on the trend of 1985 delivery levels to date, however, we estimate deliveries for the year as a whole to have risen about 20 thousand B/D, or roughly 5%. Overall, it appears that the allocation of sizable funds for highway maintenance and construction, both early in the year and in late 1985, has not yet been translated into any major increase in road oil and asphalt sales.

(In millions of B/D)	DECEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1985	1984	% Change	1985	1984	% Change
—Total domestic products supplied	16.1	15.4	4.7	15.7	15.7	(0.2)
—Motor gasoline supplied	6.6	6.6	0.3	6.8	6.7	1.6
—Distillate fuel oil supplied	3.2	2.9	11.6	2.9	2.8	0.9
—Residual fuel oil supplied	1.3	1.2	13.2	1.2	1.4	(12.6)

SUPPLY[1]

Total supply in December was 1,006 thousand B/D above year-earlier levels as a result of an 819 B/D increase in imports and a gain of 187 thousand B/D in total domestic supply.

Production

CONTINUED TO INCREASE SLIGHTLY IN 1985.

Crude production was an estimated 62 thousand B/D (0.7%) greater than last year in December, but only about 26 thousand B/D (0.3%) for the year as a whole. This is less than the roughly 2% total U.S. increase achieved during the prior year, but about the same as the 1983 year-to-year increase. Kuparuk output rose about 70% above the prior-year level in 1985, and output late in the year started at Milne Point. But the total increase in Alaskan production was barely sufficient to offset lessened output in the lower 48, where production, to some degree because of late-1985 storms, fell about 1% below 1984 levels.

Exhibit VII shows changes in Alaskan and lower 48 crude production since 1978. With partial decontrol of prices in mid-1979 and total decontrol in January 1981, production started to stabilize. Helped by new production at Kuparuk, and most recently at Milne Point, Alaskan output has grown by some 600 thousand B/D since 1978; lower 48 production started to rise year-to-year by mid-1983, though it has again shown declines in 1985. Despite the decline in lower 48 output, the production decrease in 1985 versus 1984 was only a fraction of the roughly-300 thousand B/D decline that, on average, was experienced in the seventies, prior to the start of decontrol. Overall, however, current lower 48 production is estimated to be almost 2 million barrels per day above levels that likely would have prevailed, had the pre-decontrol slide continued unabated.

EXHIBIT VII

YEAR-TO-YEAR CHANGES IN DOMESTIC CRUDE OIL PRODUCTION

Source: Department of Energy and American Petroleum Institute

As crude oil prices have been on a gradual downtrend over the past three years, drilling activity has declined. As a result of the reduced activity level, drilling costs have also been on a downtrend. Indications are that drilling costs continued to fall in 1985, as they did in 1984 and 1983. According to the recently released Joint Association Survey (JAS) for 1984, onshore cost per foot fell from $95.60 in 1982 to $60.01 in 1984, a drop of 37 percent. The bulk of this decline was due to reductions in the costs of inputs such as the services of drilling contractors and steel casing and tubing. However, roughly a quarter of the decline in cost per foot can be attributed to shallower drilling, especially for gas. Offshore, cost per foot fell 17 percent over the same period; average depth in this category changed little over the period. After adjustment for depth, the combined decline in costs was roughly 25%, in the range of estimates made by other industry sources, including the Independent Petroleum Association of America. The continued decline in drilling costs in 1984 allowed the industry to drill about 16 percent greater footage for the same total expenditure as the year before—about $25 billion.

Imports

UP 17% IN DECEMBER BUT DOWN MORE THAN 7% FOR THE YEAR AS A WHOLE.

Imports in December were 819 thousand B/D (17.4%) ahead of last year, reducing the total 1985 imports decline to an estimated 383 thousand B/D (7.3%). Because of a drawdown in inventories and significant decreases in residual fuel oil consumption and imports, total petroleum imports declined more than 20% during the first quarter compared with the corresponding 1984 period.

Exhibit VIII traces the path of crude and major product imports in 1984 and 1985. It shows that imports of crude oil, especially weak in the first quarter, picked up subsequently. For the year as a whole, imports of residual fuel oil declined about 187 thousand B/D, roughly 90% of the total drop in product imports. Gasoline imports (including gasoline components) rose more than 50 thousand B/D, or about 14%; distillate imports, on the other hand, declined close to 70 thousand B/D, in part because of strong price postings in European markets that resulted from a combination of unseasonably cool weather and reportedly-lower oil imports from East Bloc countries.

EXHIBIT VIII

IMPORTS OF CRUDE AND MAJOR PRODUCTS BY MONTH

Note: Motor gasoline includes blending components.
Sources: Department of Energy, American Petroleum Institute

TABLE 3
OPEC AND NON-OPEC PETROLEUM IMPORTS TO U.S.
(In Thousands of Barrels per Day)

	Jan.-Oct. 1979	Jan.-Oct. 1984	Jan.-Oct. 1985
Saudi Arabia	1,372	349	93
Nigeria	1,063	226	272
Venezuela	674	555	590
Algeria	626	338	186
Indonesia	410	338	301
Other OPEC	1,442	281	256
Total OPEC	5,587	2,087	1,698
Canada	522	624	756
Mexico	424	745	824
Virgin Islands	423	301	233
Netherland Antilles	230	192	36
United Kingdom	196	395	310
Other Non-OPEC	923	1,130	1,007
Total Non-OPEC	2,718	3,387	3,166
Total U.S. Imports	8,305	5,474	4,864
OPEC as % of total U.S. Imports	67.3%	38.1%	34.9%

Imports from OPEC countries declined to an estimated 35% of total for 10 months of 1985, compared with 38% in last year's corresponding period. As Table 3 shows, the major shift in OPEC-source imports resulted from a decline in Saudi Arabian imports, which dropped from about 350 thousand B/D in 1984 to less than 100 thousand B/D in 1985 (10 months' data). Longer-term, there is an even more pronounced change in import sources. For the comparable 1979 period, for example, shipments from OPEC countries had amounted to roughly 67% of total imports, with Saudi Arabia alone, at close-to-1.4 million barrels per day, filling about 17% of total U.S. imports. Mexico, currently the number one source of imports into the U.S., in 1979 only shipped oil at about half 1985's rate of more than 800 thousand B/D.

Overall, the recent decline in the value of petroleum imports contributed to a drop in petroleum's share of the trade deficit from about 73% in 1983 to an estimated 33% in 1985. As Table 4 reveals, however, the major reason for the decline in petroleum's share is the result of a doubling of the total merchandise trade deficit.

TABLE 4
TRADE DEFICIT - PETROLEUM AND TOTAL MERCHANDISE
(In Millions of Dollars)

	Petroleum	Total Merchandise	Petroleum as a % of Total
1983	50,711	69,392	73.1
1984	54,739	123,312	44.4
1985 (est.)	47,452	144,349	32.9
% Change 1985-1983	-6.4%	+108.0%	

Note: Deficits based on CIF Imports and Customs Value Exports.

Inventories

DOWN 8% AT YEAR END VERSUS DECEMBER 1984.

Exhibit IX delineates the course of inventory levels since 1980. While inventories were built up following the early-1979 supply disruption, stocks subsequently dropped steadily from the highs reached at the beginning of the eighties. Inventories started to stabilize in early 1985 on a deseasonalized basis and have undergone relatively little change during the last few months. Crude oil inventories, in the 340-360 million barrel range for about three years, dropped to 310 million barrels in mid-November but have since gained some 12 million barrels. Gasoline inventory levels, while some 17 million barrels below last year at the end of December, still represented a roughly-normal 34 days of supply. Inventories of natural gas liquids and liquefied refinery gases continue to be at considerably lower levels than last year.

EXHIBIT IX

DESEASONALIZED TOTAL PETROLEUM INVENTORIES

Source: Deseasonalized inventories based on Dept. of Energy and American Petroleum Inst. data

Distillate stocks have risen about 27 million barrels during the past three months. Production averaged about 3.1 million barrels during the November/December period, about 300 thousand B/D greater than last year. Overall, production has been the major source of distillate supply in recent years. During the 1978/79 heating season (October 1978 through March 1979), for example, production supplied about 80% of distillate demand, while stock drawdowns and net imports contributed 15% and 5%, respectively. This compares with 86% of demand being satisfied by production and 8% and 6% for stock drawdowns and net imports, respectively, in the October 1984 through March 1985 period. Thus, the role of inventories in the distillate supply picture has been greatly diminished in recent years, as plant modernizations and higher refining complexity increased flexibility in refinery yield patterns; ready availability of crude oil adds to that flexibility. The recent increases in distillate production, moreover, have been on a sustained basis, resulting from production levels reaching about 3.1 million B/D in both November and December. Distillate yields rose about 1.3 percentage points over last year during the fourth quarter, adding about 170 thousand B/D to distillate output.

Operations

UTILIZATION UP MORE THAN 1 PERCENTAGE POINT.

As Exhibit X shows, refinery utilization rates have been on an upward trend for the past two years, reaching almost 82% in December 1985. The 1.4 percentage point increase in total 1985 utilization, compared with 1984 levels, is almost entirely the result of a roughly-360 thousand B/D reduction in operable capacity; input to distillation units experienced only a minimal change.

Idle but operable capacity still represents some 1.2 million B/D of total operable capacity. Thus, utilization of capacity in actual operation exceeded 88% in December and reached an estimated 84% for the year as a whole.

EXHIBIT X

UTILIZATION OF OPERABLE REFINING CAPACITY

Sources: Department of Energy, American Petroleum Institute

(In millions of B/D)	DECEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1985	1984	% Change	1985	1984	% Change
—Total supply	17.1	16.1	6.2	16.2	16.5	(2.0)
—Crude production[2]	9.0	8.9	0.7	8.9	8.9	0.3
—Crude oil imports[3,4]	3.6	2.9	23.6	3.1	3.2	(5.4)
—Product imports	1.9	1.8	7.4	1.8	2.0	(10.3)

1. Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2. Includes lease condensate.

3. Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4. API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 493 million barrels as of December 31, 1985.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	DECEMBER			YEAR-TO-DATE		
	1985[1]	1984[2]	% Change	1985[3R]	1984[2]	% Change
Products Supplied						
Total motor gasoline	6,573	6,555	0.3	6,802	6,693	1.6
Finished leaded motor gasoline*	2,090	2,387	(12.4)	2,409	2,705	(10.9)
Finished unleaded motor gasoline*	4,483	4,168	7.6	4,393	3,988	10.2
Naphtha-jet	189	191	(1.0)	213	223	(4.5)
Kerosine-jet	1,179	1,051	12.2	985	953	3.4
Distillate fuel oil	3,198	2,865	11.6	2,871	2,845	0.9
Residual fuel oil	1,346	1,189	13.2	1,196	1,369	(12.6)
All other oils[4]	3,844	3,564	7.9	3,873	3,830	1.1
Reclassified[5]	- 229	- 39	487.2	- 243	- 186	30.6
Total domestic products supplied	16,100	15,376	4.7	15,697	15,727	(0.2)
Exports	748	986	(24.1)	742	722	2.8
Total products supplied	16,848	16,362	3.0	16,439	16,449	(0.1)
Supply						
Domestic production						
Crude oil[6]	8,959	8,897	0.7	8,905	8,879	0.3
Natural gas liquids	1,600	1,649	(3.0)	1,608	1,630	(1.3)
Other supply[7]	1,042	868	20.0	830	785	5.7
Total domestic supply	11,601	11,414	1.6	11,343	11,294	0.4
Imports						
Crude oil, total	3,593[10/]	2,907[10/]	23.6	3,054[10/]	3,229[10/]	(5.4)
Canadian	558	398	40.2	476	341	39.6
Other	3,035	2,509	21.0	2,578	2,888	(10.7)
Products, total	1,929	1,796	7.4	1,803	2,011	(10.3)
Residual fuel oil	548	627	(14.2)	494	681	(27.5)
Other	1,381	1,169	19.0	1,309	1,330	(1.6)
Total imports	5,522	4,703	17.4	4,857	5,240	(7.3)
Total supply	17,123	16,117	6.2	16,200	16,534	(2.0)
Stock change, all oils	+ 275	- 245	XXXX	- 239	+ 85	XXXX
Refinery Operations						
Input to crude oil distillation units	12,740	11,968	6.5	12,172	12,216	(0.4)
Operable capacity	15,638	15,745	(0.7)	15,677	16,033	(2.2)
Refinery utilization (%)[8]	81.5	76.0	7.2	77.6	76.2	1.8
Crude oil runs	12,538	11,755	6.8	12,018	12,044	(0.2)

Stocks (millions bbls.)	1985		1984[2]	% Change from	
	Dec. 31[9]	Nov. 30[9]	Dec. 31	Previous Month	Year Ago
Crude oil[10/]	321.9	316.0	345.4	1.6	(6.8)
Unfinished oils	102.8	100.6	93.5	(1.6)	15.3
Total motor gasoline**	226.7	215.2	243.3	5.3	(6.8)
Finished leaded motor gasoline*	80.4	84.1	92.4	10.0	(12.9)
Finished unleaded motor gasoline*	110.6	107.4	112.9	3.0	(2.0)
Naphtha-jet	6.4	6.1	6.9	1.6	(7.2)
Kerosine-jet	34.4	38.4	37.1	(9.7)	(2.0)
Distillate fuel oil	143.1	137.2	161.1	4.2	(10.9)
Residual fuel oil	48.2	47.4	53.0	1.7	(9.1)
All other oils	129.7	148.9[R]	107.4	(6.6)	(22.5)
Total all oils	1,018.6	1,016.1[R]	1,105.7	0.8	(7.9)

1. Based on API estimated data converted to a monthly basis.
2. Source: U.S. Department of Energy.
3. Source: January-October, U.S. Department of Energy; November-December, API.
4. Includes crude losses.
5. Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of products reclassified during the production phase. So that there will be no double counting of those volumes, they are subtracted from total domestic products supplied.
6. Includes lease condensate.
7. Includes Unaccounted for crude oil, Refinery input of other hydrocarbons, and Processing gain.
8. Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9. Derived by interpolating API weekly stocks data.
10. Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.

R Revised.

* Included in motor gasoline.

** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied / Supply From Primary Storage	4th QUARTER		
	1985[1]	1984[2]	% Change
Products Supplied:			
Total motor gasoline	6,767	6,694	1.1
Finished leaded motor gasoline*	2,264	2,526	(10.4)
Finished unleaded motor gasoline*	4,503	4,168	8.0
Naphtha-jet	207	215	(3.7)
Kerosine-jet	1,082	993	9.0
Distillate fuel oil	3,004	2,819	6.6
Residual fuel oil	1,228	1,201	2.2
All other oils[3]	3,943	3,748	5.2
Reclassified[4]	- 269	- 131	105.3
Total domestic products supplied	15,962	15,539	2.7
Exports	727	813	(10.6)
Total products supplied	16,689	16,352	2.1
Supply:			
Domestic production:			
Crude oil[5]	8,935	8,927	0.1
Natural gas liquids	1,601	1,658	(3.4)
Other supply[6]	874	808	8.2
Total domestic supply	11,410	11,393	0.1
Imports:			
Crude oil, total	3,463[9/]	1,278[9/]	5.6
Canadian	522	384	35.9
Other	2,941	2,894	1.6
Products, total	1,891	1,942	(2.6)
Residual fuel oil	507	557	(9.0)
Other	1,384	1,385	(0.1)
Total imports	5,354	5,220	2.6
Total supply	16,764	16,613	0.9
Stock change, all oils	+ 75	+ 261	XXXX
Refinery Operations			
Input to crude oil distillation units	12,542	12,124	3.4
Operable capacity	15,693	15,875	(1.1)
Refinery utilization (%)[7]	79.9	76.4	4.6
Crude oil runs	12,372	11,945	3.6

Stocks (millions bbls.)	4th QUARTER		
	1985[8]	1984[2]	% Change
Crude oil[9/]	321.9	345.4	(6.8)
Unfinished oils	107.8	93.5	15.3
Total motor gasoline**	226.7	243.3	(6.8)
Finished leaded motor gasoline*	80.4	92.3	(12.9)
Finished unleaded motor gasoline*	110.6	112.9	(2.0)
Naphtha-jet	6.4	6.9	(7.2)
Kerosine-jet	34.4	35.1	(2.0)
Distillate fuel oil	143.5	161.1	(10.9)
Residual fuel oil	48.2	53.0	(9.1)
All other oils	129.7	167.4	(22.5)
Total all oils	1,018.6	1,105.7	(7.9)

1. Source: U.S. Department of Energy, October, November-December, API.
2. Source: U.S. Department of Energy.
3. Includes crude losses.
4. Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
5. Includes lease condensate.
6. Includes Unaccounted for crude oil, Refinery input of other hydrocarbons, and Processing gain.
7. Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
8. Derived by interpolating API weekly stocks data.
9. Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.

* Included in motor gasoline.

** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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ESTIMATED U. S. PETROLEUM BALANCE SUMMARY

The decline in crude oil prices in January, one of the largest price changes in any monthly period in recent history, overshadowed all other events affecting the industry. Uncertainty about where a new price equilibrium might be established undoubtedly had a significant impact on the trading decisions of both buyers and sellers. As a result, delivery data for January may well be somewhat distorted and conclusions as to the implications of changes in demand and supply more difficult to draw.

With those caveats in mind, it nevertheless appears that major trends, at least for the short time period under review, have remained largely intact. Increased demand for light products continued to be the major factor in the domestic demand picture, lifting total domestic deliveries some 234 thousand B/D, about 1.4%, over last year's level. Residual fuel oil deliveries, however, declined. Crude production was an estimated 273 thousand B/D higher than last January's, when Alaskan production was reduced by about 100 thousand B/D because of interruptions in pipeline flow. Imports rose about 26% over depressed January 1985 levels; because of hauling time lags, the uncertainties created by the downward spiral of oil prices only minimally affected the rate of shipments arriving in January. Inventories fell a less-than-seasonal 6 million barrels from prior-month levels as refinery operations stayed at relatively high levels and mild weather minimized drawdown of distillate stocks.

PRODUCTS SUPPLIED[1]

Gasoline

DELIVERIES UP ALMOST 5% VERSUS LAST JANUARY'S.

Deliveries of motor gasoline rose an estimated 311 thousand B/D (4.9%) in January over prior-year levels. The major reason for the seemingly strong increase is last January's relatively low deliveries level; on a deseasonalized basis, January 1985 deliveries were some 200 thousand B/D below the levels attained, on average, for ensuing months. Taking this into consideration, it appears that the underlying trend of year-to-year increases in the 1½-2% range remained undisturbed.

Gasoline prices declined an estimated 4 cents at the pump in January from prior-month levels, roughly in line with the decline in estimated refiners' crude costs of about $2 per barrel. Price decreases focused on the unleaded gasoline market because compliance with recent lead phasedown regulations has increased the cost of producing leaded gasolines; as a result, the spread between leaded and unleaded gasolines continued to narrow.

Unleaded gasoline reached a close-to-69% market share in January, about five percentage points above year-earlier levels.

Distillates

DELIVERIES ABOUT THE SAME AS LAST JANUARY'S.

Distillate deliveries rose 5 thousand B/D (0.1%) in January compared with the prior year's level. Weather was about 19% warmer than last year, decreasing distillate demand by an estimated 270 thousand B/D. Rail traffic has recently been about 6% above year-earlier levels, and truck traffic, down year-to-year in late 1985, is estimated to have regained some strength. Overall, however, the plus effect on distillate deliveries from improved rail and truck traffic is estimated to have been only about 25 B/D. The uncertainty prevailing in distillate markets in January is not likely to have had a significant effect on deliveries into secondary storage. That distillate deliveries were about equal to last year's despite the substantial weather effect is caused in good part by the comparison with an unusually low level of distillate deliveries last January. Deliveries for that month were some 125 thousand B/D below the early-1985 trend.

Residual Fuel Oil

14% LOWER DELIVERIES THAN LAST JANUARY. Deliveries of residual fuel oil fell 207 thousand B/D (14.0%) compared with year-earlier levels. This rate of decline is out of line with recent-month developments, when deliveries, on average, were close to prior-year levels. The fact that January 1985 deliveries were some 50-100 thousand B/D above prevailing trend explains a portion of the year-to-year decrease in delivery levels. However, the balance of the decrease is still large enough to be somewhat surprising in view of the substantial residual fuel oil price decline on spot and contract markets. Spot prices late in the month equaled—and in many cases fell below—the 1985 lows experienced last June; contract prices, too, dropped substantially, reaching levels some $5 below early-1985 price levels. Natural gas prices, on the other hand, seemingly did not experience any further significant erosion during January. However, with transportation problems arising from recent changes in natural gas regulations still affecting natural gas deliverability, and resid prices falling, it is likely that the industrial sector, with its sizable dual-fuel capability, experienced some volume improvement. However, the speed and degree of late-month price changes may have been too great to affect normal purchase patterns, and the size of the swing to resid by this sector is, therefore, believed to be small.

The year-to-year deficit is thus likely to be mainly the result of lower purchases by the electric utilities sector. Generation was down about 2% in January, compared with a year ago; in addition, it appears unlikely that the late-January decline in resid prices was in time to significantly affect resid's continuous downtrend as an input to electric utility plants, which has, over the past decade, reduced petroleum's share by about three quarters.

Little change is estimated to have occurred in the level of bunker fuel deliveries. Late-1985 deliveries had experienced lessening year-to-year decreases, a trend that is likely to have carried through to January.

One element of uncertainty in comparing resid delivery levels, however, is that some resid imports were apparently used as feedstock last year, though the magnitude of that misclassification is not yet available.

Kerosine Jet Fuel

UP 12% FROM PRIOR-YEAR LEVELS. For the fourth month in a row, deliveries in January exceeded the one-million-barrel-per-day level, rising 12.1% over last January's. Miles flown levels experienced year-to-year increases averaging more than 6% in late 1985; judging from the relatively-close longer-range correspondence of changes in miles flown and jet fuel deliveries, the substantial level of kerosine jet fuel deliveries in January indicates that the high level of increases in miles flown is likely to have continued.

Other Oils

UP ABOUT 2% OVER JANUARY 1985 LEVELS. Deliveries of "other oils" rose 81 thousand B/D (2.1%) compared with January 1985 deliveries levels. The estimated increase is likely to have been in part the result of some strengthening in chemical industry activity, which may have benefited petrochemical deliveries.

For "other oils", too, the immediate impact of recent petroleum market developments is difficult to assess. Prices for liquefied petroleum products, for example, which had been rising steadily in late 1985, plummeted in January, late-month quotations dipping below those existing prior to the late-1985 price surge and year-earlier price levels. The price decline in part mirrored product price decreases in other petroleum markets but also appears to have been a reflection of declining demand for some liquefied petroleum products.

Generally speaking, falling fuel prices have been changing the alternate use value of liquefied petroleum products and refinery petrochemicals, a factor that complicates analysis of individual product performance.

For 11 months of 1985, ethane demand had been about 15 thousand B/D (2.4%) below the corresponding 1984 period, and this pattern is estimated to have continued into January. Furthermore, as prices weakened, some product extraction may have been reduced. Deliveries of propane increased 30 thousand B/D during the 11-month comparison period; butanes increased slightly, responding to continued strong demand in connection with the lead phasedown program, a trend that is likely to have continued into January.

Recent increases in road oil and asphalt deliveries of around 3% are believed to have continued as a result of rising state and local budget allocations.

(In millions of B/D)

	JANUARY ESTIMATES		
	1986	1985	% Change
—Total domestic products supplied	16.4	16.1	1.4
—Motor gasoline supplied	6.6	6.3	4.9
—Distillate fuel oil supplied	3.5	3.5	0.1
—Residual fuel oil supplied	1.3	1.5	(14.0)

SUPPLY[2/]

Total supply was an estimated 1,782 thousand B/D higher than in January 1985, resulting from a 703 thousand B/D increase in total domestic supply and a 1,079 thousand B/D increase in imports.

Production

3% HIGHER THAN LAST JANUARY'S. Total U.S. crude oil production rose 273 thousand B/D (3.1%) over January 1985 levels. The sizable year-to-year increase is mainly the result of interruptions in Alaskan pipeline flow last January, which caused production to fall some 100 thousand B/D below then-prevailing levels. The remainder of the increase is the result of higher output at Kuparuk and new production at Milne Point. Reversing a trend of prior months, lower 48 production rose 50 thousand B/D in January.

Imports

ROSE 26% OVER LAST YEAR'S LEVEL. The 1,079 thousand B/D imports increase over last January's level essentially results from comparison with the low levels experienced a year ago, when an anticipated downward adjustment in crude prices slowed purchase commitments. Crude imports accounted for about three-quarters of the increase. Following some price weakness in December, further price erosion was experienced as January wore on, though major deterioration was initially limited to spot markets. However, while there was little change in consumption, world crude production levels were on the rise. The added supply, often sold as part of the growing number of netback arrangements, eventually affected prices on petroleum markets worldwide. The bulk of the price decreases, however, probably occurred too late to affect shipments received in January, especially for long-haul imports. Gasoline imports (including gasoline components), as a result of a late-month surge, rose an estimated 30-40 thousand B/D from January 1985 levels but continued to be at considerably lower levels than in preceding months. Distillate imports rose by about 80 thousand B/D; supplies were readily available at rapidly-declining prices. About two-thirds of all distillate imports during the first 11 months of 1985 originated in Mexico, Venezuela, and the Caribbean, a week's steaming time or less from the U.S., with most of the remainder coming from Canada.

Mexico was also the number one source of total petroleum imports in November, followed by Venezuela, Canada, Saudi Arabia, and the United Kingdom, in that order. It is noteworthy that November imports from Saudi Arabia, at 430 thousand B/D, were more than twice the prior-November's rate.

Inventories

DOWN 6 MILLION BARRELS FROM DECEMBER LEVELS. Total inventories fell about six million barrels, a fraction of the normal seasonal decline; crude oil inventories rose 4 million barrels. The sizable level of imports and continued domestic production increases, at a time when demand was rising at less than 1½%, helped to hold the total January drawdown to a minimum. The low January inventory draw, however, is in good part the result of the relatively small drawdown of distillate inventories; in January distillate stocks have historically declined about 30 million barrels, but fell only 6 million barrels this January because of warmer weather and the continued high level of domestic distillate output. Distillate production again exceeded 3 million barrels per day, the third consecutive month of production at similar, relatively-high levels.

Operations

UTILIZATION ALMOST 6 PERCENTAGE POINTS ABOVE LAST YEAR'S LEVEL. Utilization of operable capacity remained above the 80% level in January, 5½ percentage points above year-earlier levels. On average, operable capacity was more than 200 thousand B/D greater than a year ago, but input to crude oil distillation rose by more than one million B/D. The counterseasonal trend in inventory levels is essentially the result of this relatively strong level of refinery operation.

(In millions of B/D)

	JANUARY ESTIMATES		
	1986	1985	% Change
—Total supply	17.0	15.3	11.7
—Crude production[2]	9.0	8.7	3.1
—Crude oil imports[3/4]	3.3	2.5	34.3
—Product imports	1.9	1.7	13.7

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 494 million barrels as of January 31, 1986.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied / Supply From Primary Storage	JANUARY			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	6,647	6,336	4.9			
Finished leaded motor gasoline*	2,087	2,319	(10.0)			
Finished unleaded motor gasoline*	4,560	4,026	13.3			
Naphtha-jet	221	218	1.4			
Kerosine-jet	1,111	941	18.1			
Distillate fuel oil	3,467	3,462	0.1			
Residual fuel oil	1,274	1,481	(14.0)			
All other oils[4]	3,977	3,896	2.1			
Reclassified[5]	- 320	- 241	32.8			
Total domestic products supplied	16,377	16,143	1.4			
Exports	842	792	6.3			
Total products supplied	17,219	16,935	1.7			
Supply:						
Domestic production:						
Crude oil[6]	8,950	8,677	3.1			
Natural gas liquids	1,630	1,642	(0.7)			
Other supply[7]	1,220	778	56.8			
Total domestic supply	11,800	11,097	6.3			
Imports:						
Crude oil, total	3,127[10/]	2,478[10/]	14.3			
Canadian	423	342	23.7			
Other	2,904	2,136	36.0			
Products, total	1,906	1,676	13.7			
Residual fuel oil	521	594	(12.3)			
Other	1,385	1,082	28.0			
Total imports	5,233	4,154	26.0			
Total supply	17,033	15,251	11.7			
Stock change, all oils	- 186	-1,684	XXXX			
Refinery Operations						
Input to crude oil distillation units	12,634	11,587	9.0			
Operable capacity	15,674	15,434	1.6			
Refinery utilization (%)[8]	80.6[7]	75.1[7]	7.3			
Crude oil runs	12,461	11,456	8.8			

Stocks (millions bbls.)	1986	1985	1985[2]	% Change from	
	Jan. 31[9]	Dec. 31[9]	Jan. 31	Previous Month	Year Ago
Crude oil[10/]	326.3	322.0r/	336.1	1.3	(2.9)
Unfinished oils	103.0	107.8	100.4	(4.5)	2.6
Total motor gasoline**	236.8	226.7	234.0	4.5	1.2
Finished leaded motor gasoline*	79.8	80.4	88.5	(0.7)	(9.8)
Finished unleaded motor gasoline*	118.4	110.6	109.3	7.1	8.3
Naphtha-jet	6.6	6.4	6.4	3.1	3.1
Kerosine-jet	35.1	34.4	34.6	2.0	1.4
Distillate fuel oil	137.1	143.5	141.8	(4.5)	(3.3)
Residual fuel oil	48.5	48.2	46.8	0.6	3.6
All other oils	141.4	151.5r/	152.3	(6.7)	(7.2)
Total all oils	1,034.8	1,040.5r/	1,052.4	(0.5)	(1.7)

1. Based on API estimated data converted to a monthly basis.
2. Source: U.S. Department of Energy.
3. Source:
4. Includes crude losses.
5. Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double-counting of these volumes, they are subtracted from total domestic products supplied.
6. Includes lease condensate.
7. Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
8. Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9. Derived by interpolating API weekly stocks data.
10. Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.

R. Revised.

* Included in motor gasoline.

** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

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ESTIMATED U.S. PETROLEUM BALANCE SUMMARY

Crude and product prices fell at an even steeper rate in February than in January, dominating events in the industry and possibly distorting delivery data. In most instances, it appears, however, that underlying demand trends continued to assert themselves. Light product deliveries posted a more-than-4% increase. For the second time in three months, residual fuel oil deliveries also rose, bringing the increase in total domestic deliveries to 5.0%.

Total U.S. crude oil production rose about ¼ of a percent, despite above-trend production last February, in good part because of higher output in the lower 48 states. Imports were about one million B/D above last February's level, depressed then because of price uncertainties, but some two hundred thousand barrels per day below seasonally-adjusted levels of the prior three months. Inventories fell about 26 million barrels in February, roughly in line with historical rates.

PRODUCTS SUPPLIED[1]

Gasoline

INCREASED LESS THAN 1% OVER FEBRUARY 1985 DELIVERIES.

Deliveries of gasoline rose only 51 thousand B/D (0.8%) in February compared with year-earlier levels, a low increase. Continued market turmoil may well have contributed to this decline from rates of increase prevailing over the past several months, possibly holding down the level of purchases by large users or holders of secondary storage. For the first two months of the year combined, deliveries are about 3.0% greater than last year, however, and even after adjustment for January 1985's below-trend level of deliveries, the resultant two-month increase of about 1.4% remains close to recent experience.

Prices at the pump continued to decline in February, falling 10-11 cents a gallon from average December levels. This drop is roughly in line with the estimated reduction in refiners' crude cost. The February decline in unleaded gasoline prices at the pump did not differ substantially from the drop in leaded gasoline prices. Over the past several months the price gap between leaded and unleaded gasolines at the wholesale level, however, has gradually narrowed. Spot prices for leaded gasolines, in fact, lately have been somewhat higher than for unleaded. These developments reflect the added costs incurred by refiners in producing leaded gasolines conforming with recent lead phasedown specifications.

Unleaded gasoline's share of the total gasoline market exceeded 69%, a seven percentage point gain since last February.

Distillates

DELIVERIES ROSE NEARLY 7% OVER YEAR-EARLIER LEVELS.

Distillate deliveries were 215 thousand B/D (6.5%) higher than last February, despite 9% warmer weather, a factor which should have depressed distillate deliveries by roughly 100 thousand B/D. Rail traffic was down slightly in February, but truck traffic is estimated to have experienced a minimal increase; these minor changes, overall, however, had little impact on distillate delivery levels. With uncertainty as to where new price equilibriums might be established in crude and product markets, the incentives of secondary and tertiary inventory holders are difficult to assess. Thus the substantial year-to-year increase in distillate deliveries in February remains largely unexplained. However, with distillate prices falling 25% or more at wholesale levels, distillates may have presented an attractive alternate fuel source to certain natural gas users at some marketing levels and locations.

Residual Fuel Oil

UP 9% COMPARED WITH LAST YEAR. For the second time during the past three months, residual fuel oil deliveries rose over prior-year levels. The nearly-9 percent, 120 thousand B/D increase is believed to be mainly the result of higher purchases by industrial users. The $7-$8 drop in spot and contract prices since the beginning of the year is likely to have encouraged further switching to resid in that sector in February. Though falling resid prices had helped to further soften natural gas prices to industrial users as gas utilities strove to maintain sales to this sector, not all suppliers were able to adapt rapidly enough or make cuts of sufficient magnitude. In fact, some gas utilities reportedly had already reached existing limits of permissible price adjustments and had to reapply to regulatory authorities for further downward adjustments in order to regain a competitive posture. Overall, we believe, gas suppliers may have lost considerable sales volume to other fuels, especially residual fuel oil, in February. Meanwhile, generation at electric utilities was down slightly in February compared to a year ago, mainly because of warmer weather. Though residual fuel oil consumption at electric utilities fell as well, lower product prices may have encouraged some inventory replenishment.

Kerosene Jet Fuel

UP 24% IN FEBRUARY. Kerosene jet fuel deliveries continued strong year-to-year gains in February, registering a 23.5 percent increase (218 thousand B/D) over last February's level. Though about 50 thousand B/D of this increase is attributable to below-trend deliveries last year, the bulk of the increase appears to result from continued growth in aircraft miles. Aircraft miles flown were growing at a 6 to 8 percent year-to-year rate in late 1985, and renewed fare competition may well have pushed increases to even higher rates in February.

Other Oils

UP NEARLY 10% OVER LAST YEAR'S LEVEL. Deliveries of "other oils" rose 363 thousand B/D (9.6%) in February compared with year-earlier levels. Prices for liquefied petroleum gases and petrochemical products continued to fall in February, reflecting decreases in other petroleum product markets.

Propane deliveries increased almost 6% in 1985 over prior-year levels and butanes, partly as a result of higher demand related to the lead phasedown program, increased by about 7%. Ethane deliveries were down about 4% in December and 3% for last year as a whole, compared with corresponding year-earlier periods. Buoyed by a strong overall increase in December, however, deliveries of liquefied petroleum gases were up almost 3% in 1985. This upward trend, however, may not have continued in February, as price drops accelerated. It may, in fact, have become more advantageous for producers by late month to keep certain liquids in the natural gas stream for their heat value than to sell product at prevailing prices.

Deliveries of petrochemical feedstocks were about 60 thousand B/D, or 22%, higher in December than a year earlier, but, because of weak activity in the chemical industry earlier in the year, finished 1985 marginally lower than during the prior year. Price declines in petrochemicals during the past two months are likely to have been one of the factors that helped sustain the improvement in chemical industry activity that started late last year; reportedly, chemical industry sales were up some 5% in the fourth quarter of 1985 compared with year-earlier results. As a result, we estimate that February deliveries of petrochemicals were well in excess of last year, perhaps by as much as 75 thousand B/D.

(In millions of B/D)	FEBRUARY ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.8	16.0	5.0	16.6	16.1	3.2
—Motor gasoline supplied	6.6	6.5	0.8	6.6	6.4	3.0
—Distillate fuel oil supplied	3.5	3.3	6.5	3.5	3.4	3.1
—Residual fuel oil supplied	1.5	1.3	8.9	1.4	1.4	(3.5)

SUPPLY[2/]

A 1,019 thousand B/D increase in imports contributed two-thirds of the more-than-1,500 thousand B/D increase in total supply, with increased domestic supply making up the remainder.

Production

ROSE ABOUT ¾%. Crude production in February is not believed to have been significantly affected by the fall in prices and consequent abandonment of wells which began to occur in the latter part of the month. For the month overall, crude production rose 66 thousand B/D (0.7%), divided about one-third/two-thirds between increases in Alaskan production and higher production than last year in the lower 48. Most of the increase in Alaskan production is the result of higher output at Kuparuk; production declined somewhat at Prudhoe Bay and offshore in southern Alaska. In the lower 48, states that are estimated to have experienced small year-to-year increases included the major producing states of Louisiana, Texas, and California.

Imports

27% HIGHER THAN LAST YEAR.

Petroleum imports rose 26.7 percent over last February's but were some 200 thousand B/D below the average for the prior three months; of the 1,019 thousand B/D increase, all but about 54 thousand B/D was crude oil. The increase is more an indication of how far below trend price uncertainties caused last February's imports to fall than it is of any increase this year. In fact, February's crude oil imports, at roughly 3 million barrels per day, were somewhat below the 1985 average. Gasoline imports, including blending components, were about equal to last February's roughly 450 thousand B/D. Though distillate imports, in part because of warmer weather and adequate domestic supplies, fell to little more than a third of January's high level, the estimated 130 thousand B/D of distillates imported in February was less than 20 thousand B/D below last year's. The relative strength of distillate prices in Europe, where many countries experienced a very cold February, also had made that area more attractive to suppliers worldwide than U.S. markets.

Exhibit I, which compares oil imports into the U.S. from leading countries for December and 1985 as a whole with year-earlier levels, shows that, by and large, the ranking of the top importers changed little year to year. However, when imports rise, as was the case in late 1985, they likely are obtained from sources that can readily make incremental material available. This is true, for example, for countries such as Saudi Arabia. The recent increase in imports from Saudi Arabia thus is not surprising. While, for 1985 as a whole, Saudi Arabia, as the exhibit indicates, was only ninth among suppliers of petroleum to the U.S., in December its volume had risen to closely match second-ranking Mexico with about 640 thousand B/D in crude and products. Saudi Arabia's decision to sell some crude on a "netback" basis related to product values served to enhance the attractiveness of Saudi crudes. Imports from Canada have also been on the increase. Canada ranked first in December, but Mexico again ranked first for the year as a whole.

OPEC's share of total imports into the U.S in 1985, at more than 36%, was slightly below 1984's close-to-38% share. For December alone, however, Saudi Arabia's year-to-year increase of more than 400 thousand B/D versus December 1984 levels raised OPEC's share by more than 7 percentage points to 42%.

Inventories

DECLINED A ROUGHLY-SEASONAL 26 MILLION BARRELS.

Total inventories fell 26 million barrels in February, roughly in line with the seasonal average. Crude stocks rose 7 million barrels in February; they also increased in two of the prior three months, recovering from the lower-than-typical levels that had prevailed in late summer and early fall.

Gasoline inventories rose 7 million barrels, about twice the average for this time of year, while distillate stocks fell a nearly-typical 23 million barrels.

Operations

UTILIZATION UP MORE THAN 4 PERCENTAGE POINTS.

Input to crude oil distillation units rose almost 750 thousand B/D over last February's levels, continuing the roughly 750 to 1,000 thousand B/D year-to-year increases experienced in December and January, respectively. While this February's operable capacity was only minimally above last year's, utilization rose more than 4 percentage points. Distillate output, though 140 thousand B/D higher than last year, dropped to about 2.6 million B/D from January's 3.0 million B/D, mainly because of warmer weather.

(In millions of B/D)	FEBRUARY ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	16.7	15.2	9.9	16.9	15.2	10.8
—Crude production[2]	8.9	8.9	0.7	8.9	8.8	2.0
—Crude oil imports[3,4]	3.0	2.0	47.6	3.2	2.3	39.9
—Product imports	1.8	1.8	3.0	1.9	1.7	8.5

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 495 million barrels as of February 28, 1986.

Exhibit I

LEADING SOURCES OF U.S. OIL IMPORTS

Source Department of Energy

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	FEBRUARY			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	6,572	6,521	0.8	6,614	6,424	3.0
Finished leaded motor gasoline*	2,022	2,473	(18.2)	2,057	2,388	(13.9)
Finished unleaded motor gasoline*	4,550	4,048	12.4	4,557	4,036	12.9
Naphtha-jet	182	209	(12.9)	203	214	(5.1)
Kerosine-jet	1,144	926	23.5	1,126	960	17.3
Distillate fuel oil	3,514	3,299	6.5	3,490	3,385	3.1
Residual fuel oil	1,463	1,343	8.9	1,366	1,415	(3.5)
All other oils[4]	4,151	3,788	9.6	4,061	3,844	5.6
Reclassified[5]	- 253	- 110	130.0	- 288	- 179	60.9
Total domestic products supplied	16,773	15,976	5.0	16,572	16,063	3.2
Exports	882	857	2.9	861	823	4.6
Total products supplied	17,655	16,833	4.9	17,433	16,886	3.2
Supply:						
Domestic production:						
Crude oil[6]	8,934	8,868	0.7	8,942	8,768	2.0
Natural gas liquids	1,674	1,630	2.7	1,651	1,636	0.9
Other supply[7]	1,278	902	41.7	1,250	837	49.3
Total domestic supply	11,886	11,400	4.3	11,843	11,241	5.4
Imports:						
Crude oil, total	2,993[10/]	2,028[10/]	47.6	3,168[10/]	2,264[10/]	39.9
Canadian	496	438	13.2	458	387	18.3
Other	2,497	1,590	57.0	2,710	1,877	44.4
Products, total	1,849	1,795	3.0	1,879	1,732	8.5
Residual fuel oil	585	614	(4.7)	551	603	(8.6)
Other	1,264	1,181	7.0	1,328	1,129	17.6
Total imports	4,842	3,823	26.7	5,047	3,996	26.3
Total supply	16,728	15,223	9.9	16,890	15,237	10.8
Stock change, all oils	- 927	-1,610	XXXX	- 543	-1,649	XXXX
Refinery Operations						
Input to crude oil distillation units	12,216	11,484	6.4	12,437	11,538	7.8
Operable capacity	15,674	15,577	0.6	15,674	15,502	1.1
Refinery utilization (%)[8]	77.9%	73.7%	5.7	79.3%	74.4%	6.6
Crude oil runs	12,035	11,393	5.6	12,260	11,426	7.3

Stocks (millions bbls.)	1986		1985[2]	% Change from	
	Feb. 28[9]	Jan. 31[9]	Feb. 28	Previous Month	Year Ago
Crude oil[10/]	333.7	326.3	325.5	2.3	2.5
Unfinished oils	101.9	103.0	99.7	(1.1)	2.2
Total motor gasoline**	244.0	236.7r/	226.8	3.1	7.6
Finished leaded motor gasoline*	80.8	79.7r/	82.6	1.4	(2.2)
Finished unleaded motor gasoline*	125.2	118.3r/	107.4	5.8	16.6
Naphtha-jet	6.8	6.6	6.2	3.0	9.7
Kerosine-jet	36.3	35.2r/	35.6	3.1	2.0
Distillate fuel oil	113.8	137.1	121.5	(17.0)	(6.3)
Residual fuel oil	41.8	48.4r/	47.0	(13.6)	(11.1)
All other oils	112.8	123.8r/	145.0	(8.9)	(22.2)
Total all oils	991.1	1,017.1r/	1,007.3	(2.6)	(1.6)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

Vol. 10, No. 3

APRIL 16, 1986

MARCH 1986

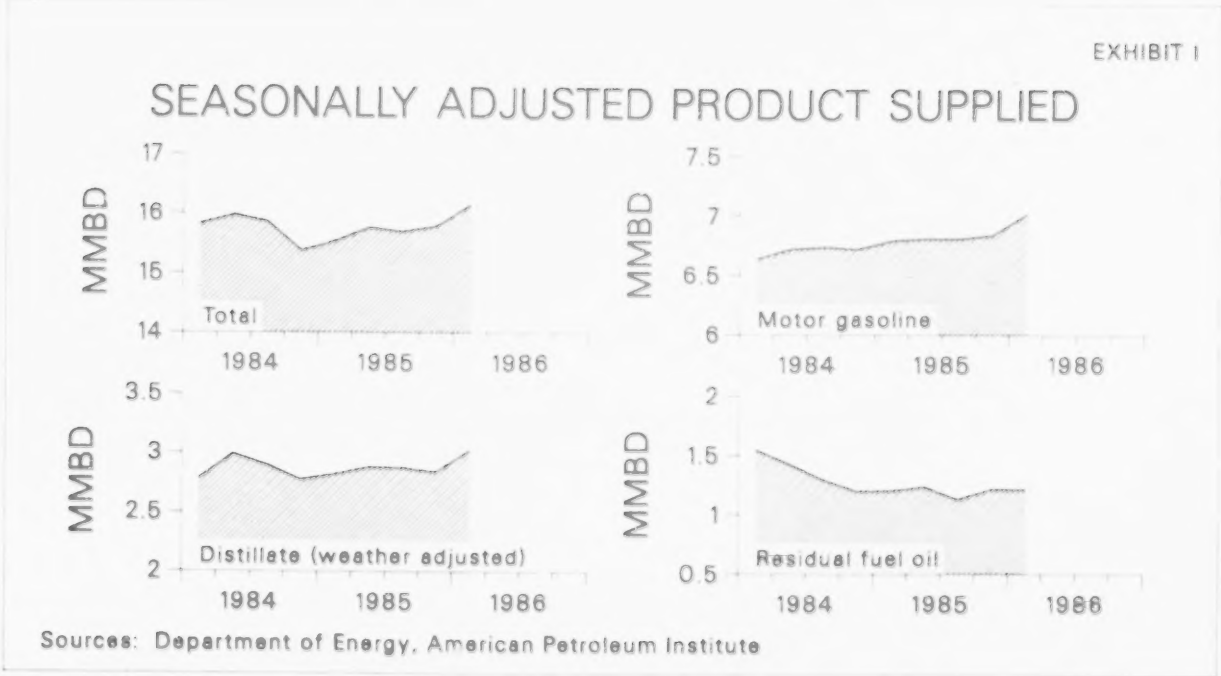
ESTIMATED U.S. PETROLEUM BALANCE
SUMMARY

Though March deliveries may have been influenced by nonprimary inventory changes in response to recent events in petroleum markets, petroleum demand appears to be experiencing renewed growth. Total domestic deliveries rose 3.6 percent in the first quarter over year-ago levels, more than 2 percentage points higher than in the last half of 1985. This year's 563 thousand B/D first quarter growth may even be somewhat understated because of changes in the Department of Energy's respondent universe in January. Adjusting January's data for these changes would add roughly half a percent to total deliveries for the first quarter.

Gasoline and distillate deliveries both experienced strong gains in the first quarter after seasonal and (in the case of distillates) weather adjustment, though these increases are likely larger than increases in consumption.

Domestic crude oil production is estimated to have declined 200 thousand B/D in March from last year and by a little over 100 thousand B/D from recent levels as a result of the recent crude oil price decline. However, the estimate is based on preliminary information, and a better measure of the effects of lower crude oil prices on production awaits more complete data from state agencies within the next several months. Imports rose 18 percent for the quarter, partly reflecting below-trend imports in early 1985. Refinery utilization, though higher than during last year's first quarter, declined in March from high levels earlier this year. Product prices that have fallen more rapidly than refiners' average crude oil costs may have led to this decline.

EXHIBIT I



Sources: Department of Energy, American Petroleum Institute

PRODUCTS SUPPLIED[1/]

Gasoline

LOWER PRICES MAY BE HAVING AN EFFECT.

Despite the possible distortions in deliveries resulting from movements in secondary and tertiary storage, it appears that the 20 percent decline in retail prices since the end of last year is beginning to have a positive influence on gasoline use. March deliveries of motor gasoline rose 6.0 percent (397 thousand B/D) over last March, and for the quarter as a whole the rate of increase was 3.2 percent (205 thousand B/D), more than one percentage point higher than the roughly 2 percent year-to-year increase experienced in the latter part of 1985. The March increase appears somewhat larger than can be explained by short-run price effects alone, since the long-run effects of the price increases of the 1970s are still being felt as older vehicles continue to be replaced by more efficient vehicles. We estimate the true consumption increase to be on the order of 3 to 4 percent for March. Unleaded's market share rose 5 percentage points from last March to 68 percent of deliveries.

Distillates

10 PERCENT MARCH INCREASE DESPITE WARMER WEATHER.

Despite slightly warmer weather and mixed results for truck and rail traffic in recent months, distillate supplied rose about 10 percent (300 thousand B/D) in March. The month was about 2 percent warmer than last year, indicating a small reduction in demand. Truck traffic in March is estimated to have grown at a rate similar to February's 3 percent, while March rail traffic showed a 5 percent decline. Since these factors taken along indicate little change in consumption, year-to-year, the explanation for the March increase must lie elsewhere. Fuel switching to distillate is occurring in some sectors, though with the total of industrial, commercial, and utility distillate use amounting to only roughly 600 thousand B/D, the volumes involved are not enough to explain the 300 thousand B/D increase in deliveries. Therefore, it appears likely that some buyers may have taken advantage of lower prices to replenish inventories and much of the March increase could be the result of movements into non-primary storage.

With little net change in the first two months of the year, the increase in distillate deliveries for the quarter as a whole averaged 2.9 percent. However, adjusting for the effects of warmer weather this year, the quarterly increase was about 7 percent due to strong gains in February and March.

Residual Fuel Oil

INDUSTRIAL AND UTILITY PURCHASES RISE.

Because of increases in industrial and electric utility purchases this year, residual fuel oil deliveries rose for the second quarter in a row. The increase for the quarter was 1.2 percent (17 thousand B/D), though deliveries declined a little less than 1 percent in March. Adjusting for the Department of Energy's change in respondents in January would add a little over 1 percent to the first quarter's growth. With bunker fuel estimated to have continued its year-to-year decline of 20 to 30 thousand B/D, electric utilities and industrial users added an estimated 40 thousand B/D to purchases in the first quarter following year-to-year increases in both sectors in last year's fourth quarter. Switching from natural gas, encouraged by lower residual fuel oil prices, appears to be the primary factor.

Kerosine Jet Fuel

STRONG GROWTH CONTINUES.

Miles flown by commercial aircraft have continued to show year-to-year growth of 8 percent for the most recent months available; thus the nearly 5 percent (46 thousand B/D) rise in kerosine jet fuel supplied in March is not surprising. For the quarter as a whole, the increase was 12 percent, partly because of below-trend deliveries in the first quarter of 1985.

Other Oils

UP 8 PERCENT FOR THE QUARTER.

Deliveries of other oils rose 7.9 percent (294 thousand B/D) for the quarter, aided by the strength of March deliveries. First quarter petrochemical feedstock deliveries are believed to have continued the strong growth experienced in January when deliveries rose 20 percent (66 thousand B/D) over the previous January.

Liquefied petroleum gases likely experienced a decline. Ethane deliveries, which fell 11 percent (69 thousand B/D) in January, have likely continued this pattern as falling prices and weak demand discouraged processors from extracting this product from natural gas streams. Weather for the quarter was 13 percent warmer than in 1985, depressing propane demand. This was evident in January, when warmer weather helped to reduce propane deliveries by 11 percent (130 thousand B/D). Other products, taken as a group, likely experienced an increase in the first quarter.

(In millions of B/D)	MARCH ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.5	15.3	7.4	16.4	15.8	3.6
—Motor gasoline supplied	7.0	6.6	6.0	6.7	6.5	3.2
—Distillate fuel oil supplied	3.4	3.1	9.8	3.4	3.3	2.9
—Residual fuel oil supplied	1.2	1.3	(0.7)	1.4	1.4	1.2

SUPPLY[2]

A 768 thousand B/D increase in imports for the first quarter joined with a 579 thousand B/D in additional domestic supply to raise total supply by 1,347 thousand B/D.

Production

ESTIMATED MARCH PRODUCTION DOWN 200 THOUSAND B/D.

Domestic crude oil production is estimated to have decreased 2.2 percent (200 thousand B/D) in March from last March, with almost all of the decline occurring in the lower 48. A little over 100 thousand B/D of the decline represents a drop from recent levels because of the recent decline in crude oil prices. However, recent production estimates should be treated with caution. API estimates are based on recent trends in production and discussions with state agency and company personnel regarding any likely interruptions in operations over the last month. This estimation method is not well suited to capture the initial production impacts of recent crude price declines. A better measure must await the reporting of more complete data from state agencies within the next few months. Production is estimated to have risen 0.5 percent in the first quarter as a whole.

Imports

QUARTER'S 18 PERCENT RISE PARTLY DUE TO LOW YEAR-AGO IMPORTS.

For the quarter as a whole, imports rose more than 18 percent; however, more than half of the first quarter's 768 thousand B/D increase is due to below-trend imports last year because of uncertainties about prices in world markets. Adjusting for this puts the increase for the quarter at about 7 percent.

March imports were down more than seasonal amounts from levels earlier in the year but still exceeded last March's imports by 2.8 percent. March crude imports, at 3,058 thousand B/D, were up 65 thousand B/D from February and slightly below the annual average for 1985. Product imports fell about 9 percent (167 thousand B/D) versus last March, largely because of a 230 thousand B/D drop in gasoline imports from last year's high levels.

Petroleum imports from Mexico in January, at 680 thousand B/D, continued at lower levels than typical during 1985, while imports from Saudi Arabia rose for the fourth consecutive month to 664 thousand B/D, a more-than-six-fold increase from January 1985. The lower Mexican imports may result in part from difficulties in adjusting sales terms in the midst of falling world crude oil prices, while the rise in imports from Saudi Arabia corresponds with the doubling of output in that country since last summer. Canada was the largest supplier to the U.S. in January at 826 thousand B/D.

Inventories

MARCH PRODUCT STOCKS FALL, CRUDE RISES.

Total inventories fell 41 million barrels in March, about 25 million barrels more than the historical average for that month. More than half the decline was in gasoline stocks, which fell 24 million barrels compared to a historical average of about 5 million barrels for March. However, because of higher-than-average accumulations earlier in the year, gasoline stocks ended the quarter at the same level as last March. Distillate stocks declined by 18 million barrels to 96 million barrels, with both the decline and the level typical of end-of-season patterns of recent years. While product stocks fell, import lags caused crude stocks to rise 6 million barrels as some refiners reduced operations from the high levels of earlier months.

Operations

MARCH DOWN FROM PRIOR MONTHS, AHEAD OF LAST YEAR.

Utilization rates in January and February were the highest for those months of the past 6 years. These high rates helped to push the average for the quarter four percentage points ahead of last year. However, as product prices fell more rapidly than refiners' crude oil costs during the quarter, input to crude oil distillation units, though still ahead of last March by nearly 370 thousand B/D, declined from levels earlier in the year.

March output of distillates was almost one-half million barrels per day greater than last year, responding to the large increase in deliveries. Gasoline output was slightly higher in March, following two months of year-to-year increases of over ten percent. For the quarter as a whole, gains in gasoline production exceeded the increase in deliveries by over 200 thousand B/D.

(In millions of B/D)	MARCH ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply[1/]	16.1	15.7	2.4	16.7	15.4	8.7
—Crude production[2/]	8.8	9.0	(2.2)	8.9	8.9	0.5
—Crude oil imports[3/4/]	3.1	2.8	10.8	3.1	2.4	27.8
—Product imports	1.7	1.9	(8.9)	1.9	1.8	5.0

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 497 million barrels as of March 31, 1986.)

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied / Supply From Primary Storage	MARCH			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	7,026	6,629	6.0	6,700	6,495	3.2
Finished leaded motor gasoline*	2,234	2,440	(8.4)	2,116	2,406	(12.1)
Finished unleaded motor gasoline*	4,792	4,189	14.4	4,584	4,089	12.1
Naphtha-jet	227	181	25.4	205	202	1.5
Kerosine-jet	986	940	4.9	1,067	953	12.0
Distillate fuel oil	3,369	3,069	9.8	3,371	3,276	2.9
Residual fuel oil	1,247	1,256	(0.7)	1,378	1,361	1.2
All other oils[4]	3,949	3,509	12.5	4,023	3,729	7.9
Reclassified[5]	- 347	- 262	32.4	- 372	- 207	79.7
Total domestic products supplied	16,457	15,322	7.4	16,372	15,809	3.6
Exports	937	694	35.0	891	778	14.5
Total products supplied	17,394	16,016	8.6	17,263	16,587	4.1
Supply:						
Domestic production:						
Crude oil[6]	8,821	9,021	(2.2)	8,898	8,855	0.5
Natural gas liquids	1,631	1,615	1.0	1,675	1,629	2.8
Other supply[7]	856	430	99.1	1,187	697	70.3
Total domestic supply	11,308	11,066	2.2	11,760	11,181	5.2
Imports:						
Crude oil, total	3,058[10/]	2,760[10/]	10.8	3,113[10/]	2,435[10/]	27.8
Canadian	557	545	2.2	517	442	17.0
Other	2,501	2,215	12.9	2,596	1,993	30.3
Products, total	1,714	1,881	(8.9)	1,874	1,784	5.0
Residual fuel oil	559	496	12.7	591	566	4.4
Other	1,155	1,385	(16.6)	1,283	1,218	5.3
Total imports	4,772	4,641	2.8	4,987	4,219	18.2
Total supply	16,080	15,707	2.4	16,747	15,400	8.7
Stock change, all oils	-1,314	- 309	XXXX	- 516	-1,187	XXXX
Refinery Operations						
Input to crude oil distillation units	11,871	11,505	3.2	12,217	11,527	6.0
Operable capacity	15,674	15,636	0.2	15,678	15,548	0.8
Refinery utilization (%)[8]	75.7%	73.6%	2.9	77.9%	74.1%	5.1
Crude oil runs	11,649	11,404	2.1	12,019	11,418	5.3

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	Mar. 31	Feb. 28	Mar. 31	Previous Month	Year Ago
Crude oil [10/]	339.9	333.7	329.1	1.9	3.3
Unfinished oils	102.6	101.9	110.2	0.7	(6.9)
Total motor gasoline**	220.4	244.0	220.1	(9.7)	0.1
Finished leaded motor gasoline*	72.2	80.8	81.3	(10.6)	(11.2)
Finished unleaded motor gasoline*	113.3	125.2	105.1	(9.5)	7.8
Naphtha-jet	6.0	6.8	6.9	(11.8)	(13.0)
Kerosine-jet	40.4	36.3	37.2	11.3	8.6
Distillate fuel oil	95.7	113.8	99.4	(15.9)	(3.7)
Residual fuel oil	39.2	41.9r/	46.3	(6.4)	(15.3)
All other oils	132.6	139.1r/	148.5	(4.7)	(10.7)
Total all oils	976.8	1,017.5r/	997.7	(4.0)	(2.1)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January, U.S. Department of Energy, February-March, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

Vol. 10, No. 4

MAY 14, 1986

APRIL 1986

ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Total domestic products delivered rose 3.2 percent (488 thousand B/D) in April and 2.4 percent for the year to date—both higher than the 1.2 percent rate during the last half of 1985. Light products' growth rates dropped from March, with distillate fuel oil actually showing a small decline versus last year. In contrast, residual fuel oil deliveries rose strongly. The reversal in distillate and the lower growth rates for other light products suggest that at least part of March's strong showing was due to movements in nonprimary inventories. Nevertheless, lower prices appear to be increasing deliveries this year—year-to-date growth for all major fuels except distillate exceeds that of 1985's last half, as shown in the table below. If distillate deliveries are adjusted for weather, the growth rate so far this year also exceeds that of the prior six months by about 3 percentage points.

YEAR-TO-YEAR GROWTH RATES, MAJOR PRODUCTS

	1986 January-April	1985 Second Half
Motor gasoline	2.6%	1.8%
Distillate	1.7	2.4
Residual fuel oil	4.4	(5.6)
Kerosine jet fuel	8.6	4.0
Total domestic deliveries	2.4	1.2

Estimated crude oil production, though based on preliminary information as noted last month, shows a 1.9 percent (168 thousand B/D) decline from last April. The effect of lower crude oil prices was apparent in lower 48 production, which since January has fallen an estimated 120 thousand B/D. A decline in product imports partly offset a rise in imports of crude oil, resulting in a net 4.8 percent (247 thousand B/D) import increase. Refineries operated at the highest April rate since 1979.

PRODUCTS SUPPLIED[1/]

Gasoline

LOWER PRICES ADD TO CONSUMPTION. Gasoline supplied rose 2.8 percent over last April, a rate of increase well below March's 6 percent but still showing a gain compared to the 1.8 percent growth rate for the last half of 1985. Retail gasoline prices again fell for the month, bringing the decline since December to about 25 cents per gallon. After adjusting for inflation, April's price levels were only a little more than half of what they were in March 1981. About one-third of that five-year decline has taken place in the most recent four months. Indeed, we estimate that the recent drop in prices has already added 1 to 2 percentage points to the growth rate of gasoline demand.

Distillates

SLIGHT DECLINE VERSUS LAST APRIL. After rising strongly year-to-year in February and March, distillate deliveries in April dropped slightly compared with last April. As with gasoline deliveries, this tends to suggest that March's unusually high, 10 percent increase was in large part due to movements in nonprimary storage. Weakness in truck traffic, combined with rail traffic showing no change from last April, account for distillate's April decline.

Residual Fuel Oil

STRONG INCREASE TIED TO UTILITY AND INDUSTRIAL USE.

Residual fuel oil's 17.4 percent, nearly-200 thousand B/D increase in April was the third of the past 5 months and contrasts with the 13 percent average decline for 1985. Fuel switching from natural gas has apparently been continuing. Purchases by electric utilities have risen year-to-year in almost every month from October through February, the latest data available. Despite warmer weather in February, utilities burned about 10 thousand B/D more residual fuel oil than in the previous February. Additional purchases have increased inventories at a time of the year when utility inventories typically decline. Increases in both utility and industrial purchases appear to account for April's deliveries increase.

Kerosine Jet Fuel

UP 3 PERCENT FOR APRIL.

Kerosine jet fuel deliveries rose 3.2 percent in April. Though this increase is lower than in recent months, figures for the year to date still show a healthy 8.6 percent increase—in line with the growth in revenue miles flown.

Other Oils

DELIVERIES INCREASE NEARLY 5 PERCENT.

Deliveries of other oils rose nearly 5 percent (174 thousand B/D) in April. Continued growth in petrochemical use and increases in refinery gas production and consumption—due to the large increase in refinery operations—appear to account for much of the increase. Meanwhile, demand for liquefied petroleum gases appears to have weakened. Deliveries for the first two months of 1986 were down about 8 percent.

(In millions of B/D)	APRIL ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	15.8	15.3	3.2	16.1	15.7	2.4
—Motor gasoline supplied	7.1	6.9	2.8	6.8	6.6	2.6
—Distillate fuel oil supplied	2.8	2.8	(0.4)	3.2	3.1	1.7
—Residual fuel oil supplied	1.3	1.1	17.4	1.4	1.3	4.4

SUPPLY[1/]

Total supply rose 40 thousand B/D over last year, the result of a 247 thousand B/D increase in imports largely offset by a 207 thousand B/D decline in domestic supply.

Production

LOWER 48 PRODUCTION DOWN 120 THOUSAND B/D FROM JANUARY.

Crude production fell 1.9 percent (168 thousand B/D) in April, in part a reflection of the recent decline in crude oil prices. Alaskan production increased about 40 thousand B/D over last April, though it has declined from levels earlier in the year; lower 48 production is estimated to have fallen more than 200 thousand B/D year-to-year. As an indicator of the impact of lower crude oil prices, April production in the lower 48 was down roughly 120 thousand B/D from January's level.

The response of crude oil production to industry economic conditions is not a new phenomenon. Crude production in the lower 48 declined roughly 300 thousand B/D per year during the price-controlled 1970s, though the decline was mitigated in the late 1970s by increased Alaskan production. After full decontrol in early 1981, U.S. production held steady or even increased somewhat until the first part of this year. Since January, estimated U.S. production has fallen each month.

Imports

UP ABOUT 250 THOUSAND B/D.

A 408 thousand B/D increase in crude oil imports was partially offset by a 161 thousand B/D decline in product imports, for a net 4.8 percent, 247 thousand B/D, increase. Crude oil imports increased about 700 thousand B/D from the levels of February and March as refinery operations rose. Product imports were down versus last year because of lower gasoline and distillate imports. Residual fuel oil imports, on the other hand, rose about 100 thousand B/D, following year-to-year increases in four of the previous six months. The recent increases contrast with an import decline averaging 170 thousand B/D in 1985.

Inventories

GASOLINE DOWN, DISTILLATES UP SLIGHTLY.

Total inventories declined 6 million barrels in April, with declines of 3 million and 14 million barrels, respectively, for crude oil and gasoline partially offset by a small increase for distillate and a 6 million barrel increase for other oils. Though the decline in gasoline stocks was somewhat larger than the April average of the past decade, declines in that month are typical. The small rise in distillates, however, was contrary to typical seasonal patterns. Though gasoline inventories at the end of April were lower than for the same month in recent previous years, the supply situation appears adequate, especially in view of the relatively minor role inventories have played in meeting peak-season demand. In fact, in three of the past four years, gasoline stocks have actually risen from the end of May to the end of August.

Operations

HIGHEST APRIL RATE SINCE 1979.

With input to distillation units rising roughly 750 thousand B/D from March levels, refineries utilized over 81 percent of operable capacity in April, returning to the 4 to 5 point year-to-year gains typical since December. April's rate was the highest for that month since 1979. If capacity that is operable but not operating is removed from the calculation, the utilization rate climbs to 86 percent. Gasoline production rose nearly 400 thousand B/D from March levels and about 150 thousand B/D above last April's production.

(In millions of B/D)	APRIL ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	16.5	16.5	0.2	16.5	15.7	5.6
—Crude production[2/]	8.8	9.0	(1.9)	8.9	8.9	(0.1)
—Crude oil imports[3/4/]	3.7	3.3	12.4	3.3	2.7	22.9
—Product imports	1.7	1.9	(8.7)	1.8	1.8	(1.4)

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ Beginning with January 1977, the U.S. Department of Energy began reporting crude oil imports as of the date of importation. Previously, this data, with the exception of Canadian crude imports, was reported as of the date it was received at the refinery. This change may affect both the level of crude oil imports and crude oil stocks. API estimates of these data may, therefore, differ slightly from those of the U.S. Department of Energy.

4/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 499 million barrels as of April 30, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	APRIL			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	7,127	6,931	2.8	6,774	6,604	2.6
Finished leaded motor gasoline*	2,277	2,554	(10.8)	2,174	2,443	(11.0)
Finished unleaded motor gasoline*	4,850	4,377	10.8	4,600	4,161	10.6
Naphtha-jet	215	245	(12.2)	207	213	(2.8)
Kerosine-jet	1,004	973	3.2	1,040	958	8.6
Distillate fuel oil	2,756	2,767	(0.4)	3,203	3,149	1.7
Residual fuel oil	1,330	1,133	17.4	1,362	1,304	4.4
All other oils[4]	3,713	3,539	4.9	3,855	3,681	4.7
Reclassified[5]	- 312	- 243	28.4	- 372	- 216	72.2
Total domestic products supplied	15,833	15,345	3.2	16,069	15,693	2.4
Exports	882	764	15.4	885	775	14.2
Total products supplied	16,715	16,109	3.8	16,954	16,468	3.0
Supply:						
Domestic production:						
Crude oil[6]	8,791	8,959	(1.9)	8,873	8,881	(0.1)
Natural gas liquids	1,674	1,600	4.6	1,683	1,621	3.8
Other supply[7]	671	784	(14.4)	954	719	32.7
Total domestic supply	11,136	11,343	(1.8)	11,510	11,221	2.6
Imports:						
Crude oil, total	3,701 10/	3,293 10/	12.4	3,257 10/	2,650 10/	22.9
Canadian	576	556	3.6	528	470	12.3
Other	3,125	2,737	14.2	2,729	2,180	25.2
Products, total	1,690	1,851	(8.7)	1,774	1,800	(1.4)
Residual fuel oil	520	422	23.2	572	530	7.9
Other	1,170	1,429	(18.1)	1,202	1,270	(5.4)
Total imports	5,391	5,144	4.8	5,031	4,450	13.1
Total supply	16,527	16,487	0.2	16,541	15,671	5.6
Stock change, all oils	- 188	+ 378	XXXX	- 413	- 797	XXXX
Refinery Operations						
Input to crude oil distillation units	12,630	11,966	5.5	12,282	11,637	5.5
Operable capacity	15,511	15,686	(1.1)	15,581	15,583	-
Refinery utilization (%)[8]	81.4%	76.3%	6.7	78.8%	74.7%	5.5
Crude oil runs	12,390	11,817	4.8	12,084	11,518	4.9

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	Apr. 30*	Mar. 31*	Apr. 30	Previous Month	Year Ago
Crude oil 10/	337.3	340.2r/	341.8	(0.9)	(1.3)
Unfinished oils	110.1	102.0r/	113.2	7.9	(2.7)
Total motor gasoline**	206.6	220.3r/	216.6	(6.2)	(4.6)
Finished leaded motor gasoline*	65.0	72.2	77.7	(10.0)	(16.3)
Finished unleaded motor gasoline*	108.8	113.2r/	104.4	(3.9)	4.2
Naphtha-jet	6.3	6.0	6.2	5.0	1.6
Kerosine-jet	39.5	40.4	35.5	(2.2)	11.3
Distillate fuel oil	96.2	95.7	97.1	0.5	(0.9)
Residual fuel oil	36.5	39.2	46.6	(6.9)	(21.7)
All other oils	141.1	135.4r/	152.0	4.2	(7.2)
Total all oils	973.6	979.2r/	1,009.0	(0.6)	(3.5)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-February, U.S. Department of Energy, March-April, API
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

Vol. 10, No. 5

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MAY 1986

ESTIMATED U.S. PETROLEUM BALANCE
SUMMARY

Total products delivered continued the year-to-year increases of recent months, though the rise in May was somewhat less than in March and April.

The 382 thousand B/D, 2.5 percent increase was mainly the net result of a decline for gasoline, following strong growth in March and April, and large increases for distillates and kerosine jet fuel. Residual fuel oil deliveries also increased above last year's above-trend deliveries.

While domestic crude oil production declined from year-ago levels, crude oil imports rose to over 4 million B/D, one of the highest levels of recent years.

Input to crude oil distillation units at refineries was at the highest May level since 1980. High levels of gasoline production combined with the decline in deliveries led to a 14 million barrel increase in gasoline inventories.

PRODUCTS SUPPLIED[1/]

Gasoline

DELIVERIES' DECLINE MAY NOT REFLECT CONSUMPTION. If recent gasoline supplied data were interpreted as actual consumption, the large swings of the past several months would represent very unusual behavior on the part of motorists. However, just as the March increase in gasoline supplied of 5 percent likely overstated the consumption increase, the 110 thousand B/D, 1.6 percent drop in gasoline supplied for May is unlikely to represent an actual decline in consumption since several factors point in the opposite direction. First, though retail prices for May rose 3 to 4 cents from the April average, more than half of this increase represents typical seasonal price variation; prices were still roughly one-fourth lower than in May 1985 and likely encouraged increased driving. Second, continued economic growth — real disposable income for the first quarter rose 2.8 percent versus the same period in 1985 — can also be expected to have added to miles travelled. One factor that may have been overrated in some quarters, however, is the effect of any reduction in foreign vacation travel by U.S. residents. Since, even at its peak, vacation driving probably accounts for less than 5 percent of domestic gasoline consumption, the impact on U.S. gasoline sales of any shift towards domestic vacationing is probably small.

The effects of higher income and lower prices are already apparent in first quarter data which show a nearly 5 percent increase in miles travelled year-to-year. If the growth in miles travelled has continued at this rate and fleet efficiency improvements averaged about 2 percent year-to-year, a net growth rate in gasoline consumption for recent months of about 3 percent is indicated. Thus, even the average 1.5 percent increase in deliveries during the past five months may understate true consumption gains.

Because of lower prices and higher income, and despite continued increases in average miles per gallon as older, less-efficient vehicles leave the fleet, the May decline more likely represents changes in nonprimary inventories.

Distillates

AHEAD ABOUT 2 PERCENT FOR FIVE MONTHS. Following a small decline in April, May distillate deliveries rose by nearly 10 percent (238 thousand B/D), bringing the year-to-date increase to about 1.7 percent, or 3.8 percent on a weather-adjusted basis. Truck traffic, after showing only slight year-to-year improvement in the first quarter, jumped ahead more than 6 percent in April. Rail traffic has been about even with last year in recent months, though its share of distillate demand is only a fifth of the 38 percent share for on-highway diesel; thus, if trucking activity continued to grow in May, at least 40 thousand B/D of the recent-months' average increase can be attributed to rising transportation use.

Residual Fuel Oil

STRONG GROWTH CONTINUES. Year-ago May deliveries of residual fuel oil were roughly 200-250 thousand B/D above trend. Thus, though this May's deliveries show only a 31 thousand B/D (2.5 percent) increase from those of last May, the data actually indicate that the strength of residual fuel oil demand is continuing. Though some gas utilities have occasionally won back fuel-switching customers with new rates and other adjustments, the net shift in fuels has continued to favor residual fuel oil. Purchases of residual fuel oil were up 20 percent (about 90 thousand B/D) in the electric utility sector in the first quarter. Growth in the industrial sector appears to be somewhat smaller.

Kerosine Jet Fuel

FIVE-MONTH INCREASE PARALLELS MILES FLOWN. Kerosine jet fuel supplied in May was almost 175 thousand B/D (19 percent) higher than last May. When averaged over the most recent five months the increase amounts to about 11 percent, a rate similar to recent increases in miles flown.

Other Oils

UP ABOUT 2 PERCENT. Deliveries of other oils rose 1.7 percent in May. Petrochemical feedstock deliveries, which rose 25 percent (80 thousand B/D) in the first quarter, likely continued that growth. Butane use in gasoline blending has also likely been increased by recent high levels of gasoline production.

(In millions of B/D)	MAY ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	15.8	15.5	2.5	16.0	15.6	2.1
—Motor gasoline supplied	6.9	7.0	(1.6)	6.8	6.7	1.5
—Distillate fuel oil supplied	2.8	2.6	9.2	3.1	3.0	1.7
—Residual fuel oil supplied	1.3	1.3	2.5	1.4	1.3	6.3

SUPPLY[1/]

A 214 thousand B/D decline in domestic supply partially offset a 417 thousand B/D increase in imports, resulting in a net 203 thousand B/D increase in total supply.

Production

DECLINE CONTINUES. Domestic production of crude oil fell 124 thousand B/D (1.4 percent) in May from the year-ago level because of declines in lower 48 production. Production in the lower 48 fell about 150 thousand B/D year-to-year, a reflection of the effects of crude oil prices roughly half of what they were at the end of 1985.

Imports

PRODUCTS DOWN BUT CRUDE IMPORTS HIGH. Continuing the pattern of recent months, product imports again declined year-to-year in favor of increased crude oil imports and higher domestic refinery production. The net result was a 417 thousand B/D, 7.6 percent rise in total imports. While product imports declined 167 thousand B/D overall, residual fuel oil imports increased by about 56 thousand B/D. Year-to-date, a shift towards lighter products by domestic refiners and higher residual fuel oil demand have contributed to the 47 thousand B/D rise in residual fuel oil imports at a time when other product imports have declined 118 thousand B/D.

Crude oil imports rose to nearly 4.1 million B/D in May, slightly larger than last November's high level and one of the highest in nearly four years.

Inventories

GASOLINE UP, CRUDE OIL DOWN. Total inventories ended the month 19 million barrels higher than for April, an increase in line with the average of the past decade. In past years, gasoline inventories have often declined during May. This year they rose about 14 million barrels and ended the month about 4 million barrels higher than last year, a result of high production levels and the decline in deliveries. High refinery utilization rates drew down crude inventories by 11 million barrels despite the increased level of crude oil imports.

Refinery Operations

UTILIZATION HIGHEST SINCE 1979. Input to crude oil distillation units rose again in May by more than 1 million B/D compared to last May's input, reaching the highest May level since 1980. The 86.7 percent utilization rate was the highest for any month since mid-1979. Gasoline production averaged nearly 7 million B/D, a 450 thousand B/D, 6.9 percent increase over last May.

For most of this year, increased refinery operations have been accompanied by greater emphasis on the production of lighter products. Year-to-date, gasoline production has risen about 330 thousand B/D and distillate by 240 thousand B/D. Domestic production of residual fuel oil, though rising about 100 thousand B/D for May, declined nearly 50 thousand B/D for the first five months as a whole. As a result, higher residual fuel oil demand this year has been met by increased imports of that product.

(In millions of B/D)	MAY ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	17.2	17.0	1.2	16.7	15.9	4.5
—Crude production[2/]	8.8	9.0	(1.4)	8.9	8.9	0.2
—Crude oil imports[3/]	4.1	3.5	16.7	3.4	2.8	20.5
—Product imports	1.8	2.0	(8.4)	1.8	1.8	(3.9)

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 500 million barrels as of May 31, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	MAY			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	6,926	7,036	(1.6)	6,794	6,692	1.5
Finished leaded motor gasoline*	2,247	2,614	(14.0)	2,195	2,478	(11.4)
Finished unleaded motor gasoline*	4,679	4,422	5.8	4,599	4,214	9.1
Naphtha-jet	221	224	(1.3)	203	215	(5.6)
Kerosine-jet	1,075	901	19.3	1,052	947	11.1
Distillate fuel oil	2,838	2,600	9.2	3,087	3,036	1.7
Residual fuel oil	1,286	1,255	2.5	1,376	1,294	6.3
All other oils[4]	3,759	3,697	1.7	3,770	3,685	2.3
Reclassified[5]	- 262	- 252	4.0	- 314	- 224	40.2
Total domestic products supplied	15,843	15,461	2.5	15,968	15,645	2.1
Exports	771	705	9.4	815	760	7.2
Total products supplied	16,614	16,166	2.8	16,783	16,405	2.3
Supply:						
Domestic production:						
Crude oil[6]	8,848	8,972	(1.4)	8,920	8,900	0.2
Natural gas liquids	1,601	1,607	(0.4)	1,664	1,619	2.8
Other supply[7]	864	948	(8.9)	907	766	18.4
Total domestic supply	11,313	11,527	(1.9)	11,491	11,285	1.8
Imports:						
Crude oil, total	4,085[10/]	3,501[10/]	16.7	3,403[10/]	2,824[10/]	20.5
Canadian	670	496	35.1	548	476	15.1
Other	3,415	3,005	13.6	2,855	2,348	21.6
Products, total	1,827	1,994	(8.4)	1,769	1,840	(3.9)
Residual fuel oil	561	505	11.1	572	525	9.0
Other	1,266	1,489	(15.0)	1,197	1,315	(9.0)
Total imports	5,912	5,495	7.6	5,172	4,664	10.9
Total supply	17,225	17,022	1.2	16,663	15,949	4.5
Stock change, all oils	+ 611	+ 856	XXXX	- 120	- 456	XXXX
Refinery Operations						
Input to crude oil distillation units	13,452	12,302	9.3	12,502	11,773	6.2
Operable capacity	15,511	15,712	(1.3)	15,527	15,609	(0.5)
Refinery utilization (%)[8]	86.7%	78.3%	10.7	80.5%	75.4%	6.8
Crude oil runs	13,243	12,141	9.1	12,323	11,646	5.8

Stocks (millions bbls.)	1986		1985[2]	% Change from . . .	
	May 31[9]	Apr. 30[9]	May 31	Previous Month	Year Ago
Crude oil 10/	326.3	336.9r/	356.4	(3.1)	(8.4)
Unfinished oils	113.9	110.1	114.0	3.5	(0.1)
Total motor gasoline**	220.2	206.6	216.6	6.6	1.7
Finished leaded motor gasoline*	70.4	65.0	75.6	8.3	(6.9)
Finished unleaded motor gasoline*	115.4	108.8	105.6	6.1	9.3
Naphtha-jet	5.7	6.3	6.4	(9.5)	(10.9)
Kerosine-jet	38.4	39.5	35.8	(2.8)	7.3
Distillate fuel oil	98.2	96.2	104.7	2.1	(6.2)
Residual fuel oil	37.0	36.5	41.8	1.4	(11.5)
All other oils	167.7	156.3r/	159.9	7.3	4.9
Total all oils	1,007.4	988.4r/	1,035.6	1.9	(2.7)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-March, U.S. Department of Energy, April-May, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

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JULY 16, 1986

JUNE 1986

ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Reversing the downward trend of the previous eight years, petroleum's estimated share of total energy consumption has increased in the first half of 1986. The gain in share was the result of little change in total energy use coupled with a 2.0 percent increase in petroleum products supplied for the first half. For June, total products supplied rose 4.3 percent. Nearly two thirds of the 666 thousand B/D June rise was the result of a strong increase in residual fuel oil deliveries. Gasoline rose 3.3 percent, adding support to the hypothesis that last month's decrease in deliveries did not reflect an actual decline in consumption.

Crude oil production declined again in June; in the lower 48, June production is estimated to be roughly 150 thousand B/D below the 1985 trend. Imports rose more than 1.7 million B/D, largely because of the high levels of crude oil imports as refinery utilization continued in the high 80s for the second month in a row. With refinery output and net imports of products exceeding quantities supplied, product inventories rose 23 million barrels.

PRODUCTS SUPPLIED[1/]

Total Energy

OIL'S SHARE REVERSES DECLINE. Despite a decline in the first quarter due to weather warmer than in the first quarter of 1985, total energy consumption in the first half of 1986 is estimated to have been about even with the same period last year. Petroleum's 2.0 percent deliveries increase translates into close to a one percentage point addition in market share, gained mainly at the expense of natural gas. This increase for petroleum is a reversal of the eight-year decline from a peak of nearly 49 percent in 1977 to 41.8 percent last year. Market shares for coal and for other energy sources (primarily nuclear and hydroelectric) are estimated to have changed little in the first half of 1986.

ESTIMATED ENERGY CONSUMPTION BY TYPE
(Quadrillion BTU)

	Coal	Natural Gas	Petroleum	Other	Total
First half 1985	8.5	9.5	15.3	3.9	37.1
First half 1986	8.6	9.0	15.6	4.0	37.1
Change	0.1	-0.5	0.3	0.1	0.0
Percent change	0.6%	-5.3%	2.0%	2.9%	0.0%
Share, first half 1985	23.0%	25.5%	41.1%	10.4%	100.0%
Share, first half 1986	23.1%	24.2%	42.0%	10.7%	100.0%
Percentage point change in market share	0.1	-1.3	0.9	0.3	

Note: figures are rounded independently and are based on unrounded data.

Gasoline

UP 3.3 PERCENT IN JUNE. After dropping nearly 2 percent in May, gasoline deliveries rose 3.3 percent year-to-year in June, tending to confirm that the prior month's decline in deliveries was not due to reduced consumption. The size of the deliveries increase is in line with last month's estimate of consumption gains and supports the view that lower prices and economic growth have increased gasoline use.

Prices slipped several cents by the end of June—contrary to typical seasonal patterns—partly as a result of supply increases that exceeded the increase in deliveries. Retail prices for the month averaged about 25 percent below year-ago levels.

Distillates

GAIN FOR QUARTER DESPITE JUNE DECLINE. Distillate deliveries declined 1.6 percent in June but rose 4.1 percent for the second quarter. Though trucking activity has been increasing in recent months—about 3 percent in May versus last May and 2 percent year-to-date—other sectors as a group suggest little in the way of consumption increases. Residential and commercial use is at its seasonal low and any movement in heating oil deliveries more likely reflects adjustments in secondary storage rather than consumption changes in this sector. Rail traffic has been relatively flat compared with a year ago and farm acreage is down. Some fuel switching may involve distillates, though the volumes are probably relatively small. Thus, though June's decline in deliveries does not likely indicate a decline in consumption, any increase is likely to have been small.

Residual Fuel Oil

ELECTRIC UTILITY USE GROWS. Deliveries of residual fuel oil jumped to over 1,400 thousand B/D in June with an increase of roughly 400 thousand B/D (38 percent). Though residual fuel oil supplied has risen in each of the previous four months by as much as 18 percent, the June increase is unusually large and may reflect in part increased buying interest due to a price decline in June. Year-to-date, deliveries have risen 160 thousand B/D, mostly due to fuel switching at utilities. For the first four months of this year, utility purchases have increased 110 thousand B/D or nearly 30 percent, and may have increased even more in recent months. Even so, this year's use by utilities is lower than for the same period in 1984 and previous years and accounts for less than 5 percent of this year's energy inputs in that sector. Little year-to-year change has been apparent in bunkering; for the remaining portion of residual fuel oil demand, warmer weather in the first quarter may have partially offset some increased industrial use due to switching.

Kerosine Jet Fuel

MILES FLOWN RISE MORE THAN PASSENGERS. Continuing its strong gains of the past few months, kerosine jet fuel again rose in June, increasing by 213 thousand B/D (23 percent). While revenue passenger miles have been running ahead of corresponding 1985 figures by about 4 percent in recent months, the increase in aircraft miles has been substantially larger. In May, available seat miles (which approximately parallel aircraft miles) rose 15 percent, year-to-year, while reduced load factors, especially on international flights, pared this down to a less-than-5 percent increase in revenue passenger miles. Aircraft miles and seat miles, however, better indicate jet fuel requirements.

Other Oils

DOWN 1.3 PERCENT. Other oils supplied in June declined 1.3 percent (50 thousand B/D), and for the year to date a slight increase (0.6 percent) is estimated. However, the small changes in the aggregate obscure divergent developments for individual products. Data available for the first four months of 1986 show a 22 percent (73 thousand B/D) increase in petrochemical feedstock deliveries due to increased production in that sector; butane deliveries rose 28 percent (43 thousand B/D) and refinery gas utilization rose 6.3 percent (34 thousand B/D). Meanwhile, reduced feedstock use and warmer weather, respectively, brought about an 8.4 percent (50 thousand B/D) decline for ethane and a 7.9 percent (74 thousand B/D) drop for propane.

(In millions of B/D)	JUNE ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.2	15.5	4.3	16.0	15.7	2.0
—Motor gasoline supplied	7.2	7.0	3.3	6.9	6.8	1.3
—Distillate fuel oil supplied	2.6	2.6	(1.6)	3.0	3.0	1.6
—Residual fuel oil supplied	1.4	1.0	38.2	1.4	1.2	13.1

SUPPLY[1/]

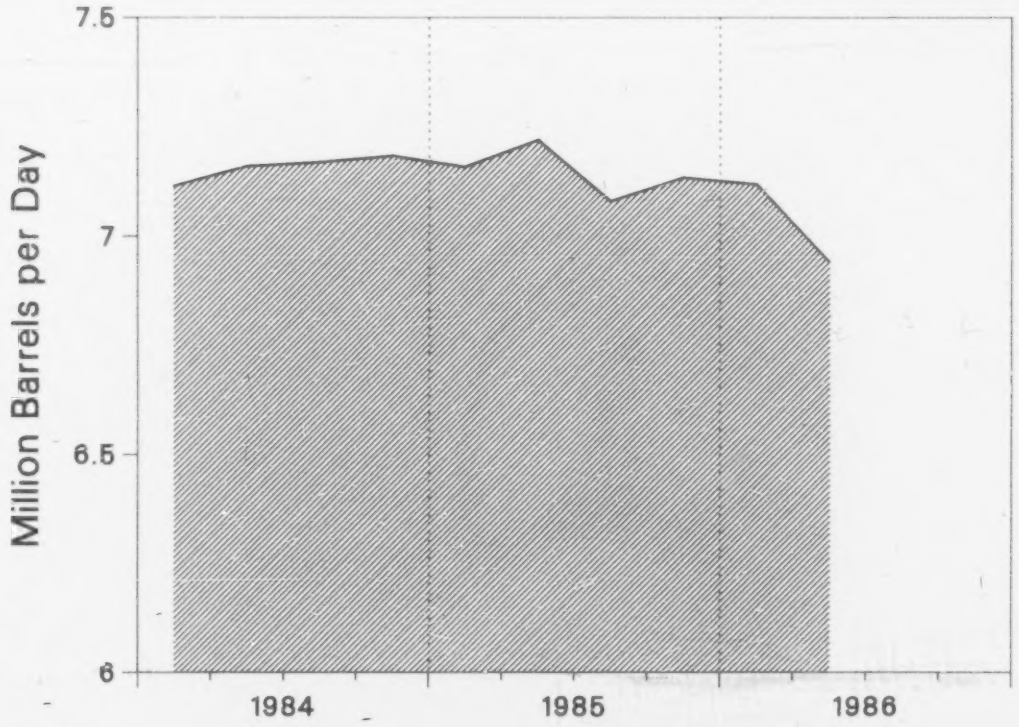
Total supply increased 1,372 thousand B/D in June, with imports rising 1,732 thousand B/D and domestic supply declining 360 thousand B/D.

Production

150 MBD BELOW TREND IN LOWER 48. Crude oil production continued its downward trend in June, dropping by an estimated 214 thousand B/D (2.4 percent) year-to-year. Though Alaskan production was slightly ahead of last June, lower 48 production fell 226 thousand B/D. As Figure 1 shows, this year's fall in crude oil prices has brought preliminary estimates of lower 48 production in the most recent quarter to less than 7 million B/D, a drop of nearly 150 thousand B/D below the 1985 trend.

FIGURE 1

LOWER 48 CRUDE OIL PRODUCTION BY QUARTERS



Sources: Department of Energy, American Petroleum Institute

Imports

CRUDE IMPORTS HIGHEST SINCE 1981. The increase in total imports of over 1.7 million B/D (36 percent) was mainly the result of higher crude oil imports. Imports of crude oil, which have been rising along with refinery runs since March, reached an estimated 4,508 thousand B/D in June—up 1,474 thousand B/D from last June and the highest level since February, 1981. Product imports also rose year-to-year for the first time since January, with residual fuel oil's 373 thousand B/D increase more than offsetting a decline for other products.

Increased imports this year have come mainly from OPEC countries and Saudi Arabia in particular. For the first four months of 1986, 43.4 percent of U.S. imports came from OPEC sources, up more than 10 percentage points from the 33.1 percent share of January-to-April 1985. On an annual basis, OPEC's share of U.S. foreign supplies has not exceeded this year's level since 1981. Imports from Saudi Arabia have increased by half a million barrels per day versus the first four months of last year, a reflection of that country's increased production levels.

Inventories

PRODUCTS RISE MORE THAN SEASONALLY. Despite the increased level of crude oil imports, high refinery runs brought stocks of crude oil down about 5 million barrels during June. Product stocks, however, rose about 23 million barrels, more than twice the historical June average, as refinery output plus net product imports exceeded deliveries. Gasoline inventories, which have more often decreased than increased in June in recent years, rose 7 million barrels during the month as refinery gasoline production reached a recent-year high.

Refinery Operations

GASOLINE PRODUCTION EXCEEDS 7 MMBD. Refinery utilization, already high in May compared to recent years, inched up to 87.0 percent in June, the highest monthly rate since 1979. As has been previously noted in this publication and elsewhere, not all of "operable" capacity has been in actual operation in recent years, though idle distillation capacity has declined from about 2 million B/D in early 1983 to less than 1 million B/D in April of this year. It is estimated that the portion of this idle capacity that has been unused for more than a year ranges from one fourth in the Gulf Coast area to two-thirds on the West Coast, averaging a little less than half nationally. If refining capacity idle for more than one year is excluded, the utilization rate rises to nearly 90 percent for June.

Gasoline production in June averaged 7.1 million B/D, up 5 percent from last June and the highest level since the late 1970s.

(In millions of B/D)	JUNE ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	17.5	16.1	8.5	16.8	16.0	4.5
—Crude production[2/]	8.8	9.0	(2.4)	8.9	9.0	(0.9)
—Crude oil imports[3/]	4.5	3.0	48.6	3.6	2.9	25.2
—Product imports	2.0	1.7	14.8	1.8	1.8	(3.1)

API Survey on Oil and Gas Expenditures now available — The report details 1983 spending for exploration, development, and production for such items as drilling costs, acreage acquisition, improved recovery, operating costs, taxes, and others. The estimates are broken out geographically for onshore/offshore lower 48 and total Alaska and between larger and smaller companies. The report is intended to fill the gap left by the discontinuation of the Census Bureau's *Annual Survey of Oil and Gas* and is priced at $10. To order, contact the Publications and Distribution Section, American Petroleum Institute, 1220 L Street Northwest, Washington, D. C. 20005.

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 502 million barrels as of June 30, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	JUNE			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	7,230	6,997	3.3	6,859	6,769	1.3
Finished leaded motor gasoline*	2,204	2,515	(12.4)	2,195	2,491	(11.9)
Finished unleaded motor gasoline*	5,026	4,482	12.1	4,664	4,278	9.0
Naphtha-jet	203	232	(12.5)	199	220	(9.5)
Kerosine-jet	1,123	910	23.4	1,073	964	11.3
Distillate fuel oil	2,553	2,594	(1.6)	3,028	2,979	1.6
Residual fuel oil	1,441	1,043	38.2	1,386	1,226	13.1
All other oils[4]	3,903	3,953	(1.3)	3,750	3,726	0.6
Reclassified[5]	- 303	- 245	23.7	- 313	- 211	48.3
Total domestic products supplied	16,150	15,484	4.3	15,982	15,673	2.0
Exports	768	692	11.0	798	749	6.5
Total products supplied	16,918	16,176	4.6	16,780	16,422	2.2
Supply:						
Domestic production:						
Crude oil[6]	8,808	9,022	(2.4)	8,928	9,009	(0.9)
Natural gas liquids	1,568	1,597	(1.8)	1,629	1,604	1.6
Other supply[7]	628	745	(15.7)	827	709	16.6
Total domestic supply	11,004	11,364	(3.2)	11,384	11,322	0.5
Imports:						
Crude oil, total	4,508[10/]	3,034[10/]	48.6	3,577[10/]	2,856[10/]	25.2
Canadian	628	455	38.0	561	474	18.4
Other	3,880	2,579	50.4	3,016	2,382	26.6
Products, total	1,999	1,741	14.8	1,793	1,850	(3.1)
Residual fuel oil	773	400	93.3	603	466	29.4
Other	1,226	1,341	(8.6)	1,190	1,384	(14.0)
Total imports	6,507	4,775	36.3	5,370	4,706	14.1
Total supply	17,511	16,139	8.5	16,754	16,028	4.5
Stock change, all oils	+ 593	- 37	XXXX	- 26	- 394	XXXX
Refinery Operations						
Input to crude oil distillation units	13,491	12,422	8.6	12,655	11,871	6.6
Operable capacity	15,511	15,669	(1.0)	15,517	15,629	(0.7)
Refinery utilization (%)[8]	87.0%	79.3%	9.7	81.6%	76.0%	7.4
Crude oil runs	13,285	12,292	8.1	12,497	11,731	6.5

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	Jun. 30[9]	May 31[9]	Jun. 30	Previous Month	Year Ago
Crude oil [10/]	321.6	326.3	344.1	(1.4)	(6.5)
Unfinished oils	112.6	113.9	113.8	(1.1)	(1.1)
Total motor gasoline**	227.2	220.2	218.3	3.2	4.1
Finished leaded motor gasoline*	73.3	70.4	85.1	4.1	(13.9)
Finished unleaded motor gasoline*	118.8	115.5r/	101.1	2.9	17.5
Naphtha-jet	6.0	5.7	6.2	5.3	(3.2)
Kerosine-jet	38.8	38.5r/	36.5	0.8	6.3
Distillate fuel oil	105.5	98.3r/	109.7	7.3	(3.8)
Residual fuel oil	38.7	37.0	39.6	4.6	(2.3)
All other oils	170.3	163.0r/	166.3	4.5	2.4
Total all oils	1,020.7	1,002.9r/	1,034.5	1.8	(1.3)

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-April, U.S. Department of Energy, May-June, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	2nd QUARTER		
	1986[1]	1985[2]	% Change
Products Supplied:			
Total motor gasoline	7,077	7,005	1.0
Finished leaded motor gasoline*	2,240	2,563	(12.6)
Finished unleaded motor gasoline*	4,837	4,442	8.9
Naphtha-jet	205	235	(12.8)
Kerosine-jet	1,087	941	15.5
Distillate fuel oil	2,776	2,666	4.1
Residual fuel oil	1,350	1,109	21.7
All other oils[3]	3,708	3,742	(0.9)
Reclassified[4]	- 294	- 211	39.3
Total domestic products supplied	15,909	15,487	2.7
Exports	788	720	9.4
Total products supplied	16,697	16,207	3.0
Supply:			
Domestic production:			
Crude oil[5]	8,824	9,066	(2.7)
Natural gas liquids	1,577	1,591	(0.9)
Other supply[6]	697	769	(9.4)
Total domestic supply	11,098	11,426	(2.9)
Imports:			
Crude oil, total	4,080[9/]	3,281[9/]	24.4
Canadian	624	506	23.3
Other	3,456	2,775	24.5
Products, total	1,809	1,902	(4.9)
Residual fuel oil	612	392	56.1
Other	1,197	1,510	(20.7)
Total imports	5,889	5,183	13.6
Total supply	16,987	16,609	2.3
Stock change, all oils	+ 290	+ 402	XXXX
Refinery Operations			
Input to crude oil distillation units	13,172	12,221	7.8
Operable capacity	15,497	15,656	(1.0)
Refinery utilization (%)[7]	85.0%	78.1%	8.8
Crude oil runs	13,005	12,064	7.8

Stocks (millions bbls.)	2nd QUARTER		
	1986[8]	1985[2]	% Change
Crude oil	321.6[9/]	344.1[9/]	(6.5)
Unfinished oils	112.6	113.8	(1.1)
Total motor gasoline**	227.2	218.3	4.1
Finished leaded motor gasoline*	73.3	85.1	(13.9)
Finished unleaded motor gasoline*	118.8	101.1	17.5
Naphtha-jet	6.0	6.2	(3.2)
Kerosine-jet	38.8	36.5	6.3
Distillate fuel oil	105.5	109.7	(3.8)
Residual fuel oil	38.7	39.6	(2.3)
All other oils	170.3	166.3	2.4
Total all oils	1,020.7	1,034.5	(1.3)

1/ Source: U.S. Department of Energy, April; May-June, API.
2/ Source: U.S. Department of Energy.
3/ Includes crude losses.
4/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
5/ Includes lease condensate.
6/ Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
7/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
8/ Derived by interpolating API weekly stocks data.
9/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Monthly Statistical Report

Prepared by the Statistics Department

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AUGUST 13, 1986

JULY 1986

ESTIMATED U. S. PETROLEUM BALANCE SUMMARY

July deliveries of petroleum products rose 5.7 percent (875 thousand B/D) compared to last July, the largest year-to-year increase experienced so far this year. Recent trends suggest that the underlying growth rate is 4 to 5 percent, with increased gasoline consumption and continued fuel switching being two of the primary contributors.

Estimated crude oil production in the lower 48 declined nearly 230 thousand B/D year to year, though Alaskan production increased about 90 thousand B/D due to below-trend production last year. Total imports declined somewhat from June's level but were still 1.6 million B/D above last July as high crude oil imports continued. Refinery operations also declined from June's recent-year high, though utilization was still 3 percentage points ahead of last year. Total stocks rose 27 million barrels, largely due to a 19 million barrel increase in crude oil inventories.

PRODUCTS SUPPLIED[1/]

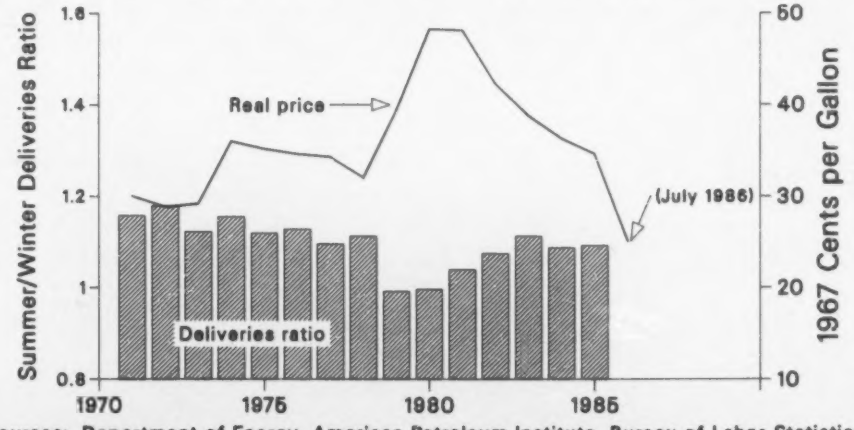
Gasoline

UP 4.5 PERCENT IN SUMMER'S FIRST TWO MONTHS.

Though gasoline deliveries' year-to-year gains have fluctuated in recent months — down a percent in May, up 3.3 percent in June, and now up 5.7 percent for July — the effect of this year's lower prices on gasoline use is becoming apparent. Motor gasoline deliveries' 400 thousand B/D rise in July brings the summer's average growth rate so far to 4.5 percent, the largest average June-July gain in eight years. This rate of increase appears to be a reasonable estimate of actual consumption gains when seasonal variations in price responsiveness are considered.

Figure 1

REAL GASOLINE PRICES AND SUMMER/WINTER DELIVERIES RATIOS



Sources: Department of Energy, American Petroleum Institute, Bureau of Labor Statistics, Platts Oil Price Handbook
Note: Summer is defined as June-August, Winter as the prior December-February.

Gasoline demand historically has been more price-responsive in the summer months than at other times of the year because of the greater proportion of recreational, vacation, and other "discretionary" driving in that season. As Figure 1 shows, the ratio of summer to winter gasoline deliveries trended downward in the 1970s in response to higher real gasoline prices. Similarly, declining prices in the past five years have corresponded with an upturn in summer gasoline deliveries relative to winter. These data suggest that this year's large price decline may also be having a more-than-proportional effect on summer gasoline demand.

That price decline continued in July, with retail prices falling 6-9 cents. This puts July's inflation-adjusted gasoline prices at half the early 1981 peak and, as the graph shows, below the level of real prices that existed prior to the 1973-74 oil embargo.

Distillate

ON-HIGHWAY DIESEL USE RISES. Distillate deliveries rose 2.3 percent (55 thousand B/D) in July, contrasting with the previous month's small decline. July's increase is essentially the same as the weather-adjusted, year-to-date gain. The principal consumption increase appears to be for on-highway diesel, with increases in trucking activity averaging about 5 percent in recent months.

Residual Fuel Oil

JUNE'S STRONG INCREASE REPEATED. Residual fuel oil deliveries rose strongly again in July, with the nearly 400 thousand B/D, 38 percent increase closely matching June's increase. For the year to date, residual fuel oil deliveries have increased nearly 17 percent (201 thousand B/D), contrasting with the 14 percent average annual decline of the previous five years.

Year-to-year growth in residual fuel oil deliveries has accelerated in recent months, largely because of lower prices and fuel switching. Early in the year, there was little net change in deliveries; from March to May, increases averaged near 200 thousand B/D; the most recent two months have experienced increases twice that amount. Bunkering has shown little year-to-year change so far in 1986 and any large impact from industrial fuel switching has not been apparent. However, additional utility purchases of residual fuel oil may have continued to rise from May's 220 thousand B/D year-to-year increase, since, despite consumption increases of 40 to 50 percent in March through May, utilities' inventories were still below year-ago levels. Thus, part of the recent surge in deliveries could well include replenishment of end-user stocks.

Kerosine Jet Fuel

DOWN DESPITE AIR TRAFFIC TRENDS. After June's unusually large increase of over 20 percent, July deliveries of kerosine jet fuel dropped a surprising 2.5 percent year-to-year. Air traffic data for the latest periods, however, continue to show strong growth — bringing into question whether the deliveries drop was related to any change in the upward trend of jet fuel consumption. Miles flown were up about 2 percent for the first five months of 1986 and available seat miles for June showed a 20 percent gain, though part of this increase is attributable to a strike during part of June 1985. It is likely that air traffic growth continued in July.

Other Oils

DELIVERIES DECLINE SLIGHTLY. Deliveries of all other oils fell slightly in July (0.8 percent or 33 thousand B/D). The latest Department of Energy data show petrochemical feedstocks continuing their strong growth of previous months with a 111 thousand B/D, 31 percent increase for May. Meanwhile, deliveries of liquefied petroleum gases again dropped, with declines for ethane and propane of 45 to 50 thousand B/D each, partially offset by a similar gain for butanes.

(In millions of B/D)	JULY ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.3	15.4	5.7	16.0	15.6	2.5
—Motor gasoline supplied	7.4	7.0	5.7	7.0	6.8	2.1
—Distillate fuel oil supplied	2.5	2.4	2.3	2.9	2.9	1.4
—Residual fuel oil supplied	1.5	1.1	37.7	1.4	1.2	16.7

SUPPLY[1/]

Imports increased 1,625 thousand B/D and domestic supply rose 274 thousand B/D, bringing the increase in total supply for July to 1,899 thousand B/D.

Production

ALASKA UP, LOWER 48 DOWN. Estimated U.S. crude oil production declined about 140 thousand B/D compared to last July. However, a roughly 90 thousand B/D increase for Alaska (due to below-trend production last July) partially masked the nearly 230 thousand B/D decline for the lower 48.

Much of the decline is likely due to reduced upkeep of existing wells, though dramatically reduced drilling and shut-ins have also played a part in the decline. Well servicing activity has reportedly declined by more than 40 percent since late last year.

Imports

TOTAL UP 1.6 MMBD DUE TO CRUDE INCREASE. Though total imports for July declined about 160 thousand B/D from June's recent-year high, they were still some 1.6 million B/D above last year. The year-to-year increase was largely the result of crude oil imports close to June's high level and 1.3 million B/D above last July's. This high level of imports contributed significantly to July's above-normal inventory increase. Product imports also rose by more than 300 thousand B/D, the second monthly increase in a row.

Part of the increase in product imports is due to a rise in imports of residual fuel oil, which, after nearly a decade of decline, have been on an upward trend this year in response to growing demand. July's 366 thousand B/D increase brings the average rise for the past seven months to about 185 thousand B/D or 40 percent.

Distillate imports rose 149 thousand B/D in July, and imports of gasoline and components, though falling 124 thousand B/D from last July's high levels, were still about 50 thousand B/D above July 1984 imports.

Refinery Operations

DOWN FROM JUNE, UP FROM LAST JULY. Input to distillation units declined by roughly 400 thousand B/D from June's recent-year record, though utilization still averaged nearly 84 percent for the month — a 3-point gain over last year. This utilization rate is calculated on total operable capacity; approximately 400 thousand B/D of this capacity had been idle for more than a year at the beginning of 1986 — with 27 percent of the total in PAD I, 20 percent in both PADs II and III, 3 percent in PAD IV, and 30 percent in PAD V. If this idle capacity is excluded, the utilization rate rises to about 86 percent. Gasoline production, after showing gains of 8 and 5 percent in May and June respectively, rose 2.2 percent year-to-year in July and averaged over 6.9 million B/D.

Inventories

TOTAL STOCKS UP 27 MMB FROM JUNE. Total inventories rose 27 million barrels during July, well above the average 4 million barrel increase of the previous three years. Most of the increase was in crude oil stocks, which rose 19 million barrels as a result of continued high import levels in July. Product stocks rose 8 million barrels, despite a 5 million barrel decline for gasoline as the high rate of deliveries exceeded supplies from refineries and imports.

(In millions of B/D)	JULY ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	18.0	16.1	11.8	16.9	16.0	5.7
—Crude production[2/]	8.8	8.9	(1.6)	8.9	9.0	(1.0)
—Crude oil imports[3/]	4.3	3.0	44.1	3.7	2.9	27.7
—Product imports	2.1	1.7	17.8	1.9	1.8	1.1

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 503 million barrels as of July 31, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	JULY			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	7,408	7,008	5.7	6,950	6,804	2.1
Finished leaded motor gasoline*	2,268	2,464	(8.0)	2,211	2,487	(11.1)
Finished unleaded motor gasoline*	5,140	4,544	13.1	4,739	4,317	9.8
Naphtha-jet	231	207	11.6	205	218	(6.0)
Kerosine-jet	984	1,009	(2.5)	1,052	971	8.3
Distillate fuel oil	2,491	2,436	2.3	2,940	2,899	1.4
Residual fuel oil	1,457	1,058	37.7	1,403	1,202	16.7
All other oils[4]	3,987	4,020	(0.8)	3,783	3,769	0.4
Reclassified[5]	- 249	- 304	(18.1)	- 300	- 225	33.3
Total domestic products supplied	16,309	15,434	5.7	16,033	15,638	2.5
Exports	770	675	14.1	786	738	6.5
Total products supplied	17,079	16,109	6.0	16,819	16,376	2.7
Supply:						
Domestic production:						
Crude oil[6]	8,810	8,949	(1.6)	8,912	9,000	(1.0)
Natural gas liquids	1,564	1,568	(0.3)	1,618	1,599	1.2
Other supply[7]	1,230	813	51.3	892	724	23.2
Total domestic supply	11,604	11,330	2.4	11,422	11,323	0.9
Imports:						
Crude oil, total	4,291[10/]	2,977[10/]	44.1	3,671[10/]	2,874[10/]	27.7
Canadian	592	385	53.8	552	461	19.7
Other	3,699	2,592	42.7	3,119	2,413	29.3
Products, total	2,058	1,747	17.8	1,856	1,835	1.1
Residual fuel oil	803	437	83.8	647	462	40.0
Other	1,255	1,310	(4.2)	1,209	1,373	(11.9)
Total imports	6,349	4,724	34.4	5,527	4,709	17.4
Total supply	17,953	16,054	11.8	16,949	16,032	5.7
Stock change, all oils	+ 874	- 55	XXXX	+ 130	- 344	XXXX
Refinery Operations						
Input to crude oil distillation units	13,091	12,663	3.4	12,694	11,987	5.9
Operable capacity	15,602	15,670	(0.4)	15,526	15,635	(0.7)
Refinery utilization (%)[8]	83.9%	80.8%	3.8	81.8%	76.7%	6.6
Crude oil runs	12,957	12,445	4.1	12,567	11,836	6.2

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	July 31[9]	June 30[9]	July 31	Previous Month	Year Ago
Crude oil [10/]	340.9	321.5r/	327.0	6.0	4.3
Unfinished oils	108.2	112.6	111.9	(3.9)	(3.3)
Total motor gasoline**	222.3	227.2	226.5	(2.2)	(1.9)
Finished leaded motor gasoline*	71.8	73.3	80.0	(2.0)	(10.3)
Finished unleaded motor gasoline*	116.0	118.8	112.1	(2.4)	3.5
Naphtha-jet	5.5	6.0	7.0	(8.3)	(21.4)
Kerosine-jet	43.1	38.8	36.0	11.1	19.7
Distillate fuel oil	116.4	105.5	115.7	10.3	0.6
Residual fuel oil	39.7	38.7	40.5	2.6	(2.0)
All other oils	177.0	175.7r/	168.2	0.7	5.2
Total all oils	1,053.1	1,026.0r/	1,032.8	2.6	2.0

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-May, U.S. Department of Energy, June-July, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

PETROLEUM IMPORTS AND REAL GNP

This year's dramatic decline in petroleum prices has highlighted some of the already-existing pitfalls inherent in analyzing traditional GNP measures, and in particular, the role of the foreign trade components.

For example, according to preliminary figures released by the Department of Commerce on July 22, real Gross National Product (GNP), a measure of the country's output of goods and services, rose only 1.1 percent (at an annual rate) from the prior quarter. However, because of the large drop in international petroleum prices this year, the interpretation of traditionally-defined GNP as a measure of U.S. economic well-being has been distorted. When the data are re-expressed in terms of the U.S. economy's "command" over goods and services (see below), the second quarter's growth rate rises to as much as 3.0 percent. Next week's revisions may change the specific figures, but the divergence is likely to remain.

In addition, the recently-released figures showed a $23 billion increase in "real" imports (annual rate from the prior quarter), two-thirds of which was attributed to increased petroleum imports. This "increase", however, arises from the methodology used to calculate real GNP; in fact, in current dollars, the Commerce Department's preliminary data show only a $3 billion increase in imports and a $7 billion decline in expenditures for petroleum imports from the first quarter (annual rates).

What is GNP Measuring?

The traditional estimates of real GNP are intended to measure U.S. production of goods and services. Though GNP is expressed in dollars, in a sense it is actually an index of quantities; prices from a base period — 1982, currently — are used to convert quantities to a common measure so that output of many diverse goods and services can be combined into summary figures. This combined output can be calculated as the sum of consumption, investment (in structures, equipment, and inventories), and net exports (that is, the net difference between what was produced in the U.S. but shipped elsewhere and what was not produced yet consumed in the U.S.). It is a difference in treatment of this latter category that is the cause of the disparate growth rates cited above.

The most commonly-used GNP series published by the Department of Commerce converts international trade data to 1982 dollars by separately deflating exports by export prices for individual goods and services and imports by corresponding import prices. This produces a measure of GNP unaffected by changes in the terms of trade, as is appropriate if the series is to be used as a measure of domestic production. However, the resulting "real" trade balance figures are often difficult to meaningfully interpret and are even sometimes seemingly contradictory. As an extreme example, the traditional GNP accounts show that at times in the 1970s the U.S. was a net exporter on a nominal basis but simultaneously a net importer in 1982 real dollar terms.

A further example — as noted above, the preliminary GNP accounts for the second quarter show a $16 billion increase in real petroleum imports (annual rate from the prior quarter) when the current dollar value actually declined. Year-to-year comparisons display similar divergences; from second quarter 1985 to second quarter 1986, real petroleum imports rose 17 percent while actual expenditures fell about 40 percent. These divergences arise entirely from the fact that there was an increase in quantity in both cases (which is what the "real" figure is designed to measure) but an even larger percentage decline in prices. In terms of the U.S. position in international trade, the "real" increase is difficult to interpret, since expenditures for petroleum imports relative to the prices for other goods and services did, in fact, decline during the first half of 1986.

Thus, though the traditional approach to measuring GNP yields a measure of domestic output, changes in domestic output do not always parallel changes in economic well-being. Specifically, since oil prices now are roughly half of what they were last year, the U.S. needs to give up fewer resources in exchange for imported oil than it did before. However, since in the GNP accounts imports and exports are still valued at their 1982 prices (and oil is valued at over $31 per barrel), "imports" in 1982 dollars are substantially higher than when measured at current prices and net exports are consequently lower. These lower real net exports reduce real GNP as traditionally calculated.

Alternatives

The anomalous effect that the traditional approach to GNP accounting has on foreign trade data has been a subject of debate among economists for many years. A number of economists have argued that since the "command" the U.S. economy has over quantities of foreign goods and services depends not on prices from some prior period but on current relative prices of imports versus exports, a better measure of U.S. economic well-being can be constructed. This can be done by deflating imports and exports by a common price measure and thus preserving the terms of trade.

The Commerce Department publishes an alternative, "command-basis" GNP series in which net exports are deflated by the deflator for imports (see Edward Denison, "International Transactions in Measures of the Nation's Production", *Survey of Current Business,* May 1981, pp. 17-28). Geoffrey Moore ("Needed Improvements in Economic Statistics", *Business Economics,* July 1986, pp. 21-25), in calling attention to the anomalous trade figures produced by traditional GNP accounting, has proposed that net exports be deflated by the deflator for gross domestic purchases (GDP). GDP is GNP less net exports, so its deflator is a broader measure of price levels than the import deflator.

These "command-basis" measures provide meaningful information about U.S. economic conditions that the traditional figures do not. However, as Denison has noted, for analysing matters such as domestic productivity, the traditional measure is more appropriate.

Some Comparisons

Table 1 displays real GNP and net exports based on three different methodologies: the traditional Commerce Department estimates, Commerce's "command-basis" figures, and a series calculated according to Moore's GDP-based methodology. As the table shows, by the second quarter of 1986, the traditional measure of real net exports, i.e. the trade deficit, was nearly 40 percent higher than Commerce's "command" series and more than 70 percent higher than the GDP-based command series.

These differences can have a significant effect on the estimate of economic growth, as Table 2 shows. For 1985, estimated quarterly growth rates differ by half a percentage point or less, but this year's second quarter rates differ markedly. While the traditional series shows a substantial drop to 1.1 percent from the previous trend of roughly 3 percent growth, the two "command" series are less pessimistic. In fact, the GDP-based series produces an estimated rate of growth in the second quarter of 3.0 percent, suggesting that rather than slowing, the economy was essentially continuing the trend of prior quarters. Even over the space of the most recent four quarters, the GDP-based series estimates economic growth to be more than half a point greater than the traditional measure.

Conclusion

The traditional treatment of foreign trade in the GNP accounts, though it has its purpose, is not responsive to changes in the terms of trade and can lead to misleading conclusions. As this article has shown, alternative approaches to accounting for foreign trade can sometimes alter appraisals of the economy's strength significantly.

TABLE 1

REAL GNP AND COMMAND-BASIS GNP
(Billons of Dollars at Annual Rates)

	Real GNP			Real Net Exports		
	Traditional	Commerce Command Basis	GDP Command Basis	Traditional	Commerce Command Basis	GDP Command Basis
1985:I	$3,547.0	$3,574.1	$3,580.7	$ -78.8	$ -51.8	$-45.2
1985:II	3,567.6	3,594.8	3,605.8	-108.1	-80.9	-69.9
1985:III	3,603.8	3,629.5	3,642.2	-113.8	-88.1	-75.4
1985:IV	3,622.3	3,644.2	3,660.4	-132.0	-110.1	-93.9
1986:I	3,655.9	3,682.9	3,698.8	-125.9	-99.0	-83.1
1986:II	3,665.7	3,706.1	3,726.5	-146.3	-105.9	-85.1

Figures rounded independently.

TABLE 2

QUARTER-TO-QUARTER PERCENT CHANGE IN MEASURES OF REAL GNP
(Annual Rates)

	Traditional	Commerce Command Basis	GDP Command Basis
1985:I	3.1%	3.4%	3.3%
1985:II	2.3	2.3	2.8
1985:III	4.1	3.9	4.1
1985:IV	2.1	1.6	2.0
1986:I	3.8	4.3	4.3
1986:II	1.1	2.5	3.0
1985:II to 1986:II	2.7	3.1	3.3

Figures rounded independently.

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Monthly Statistical Report

Prepared by the Statistics Department

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AUGUST 1986

ESTIMATED U.S. PETROLEUM BALANCE

SUMMARY

Petroleum imports in August reached their highest level since 1980, aided by higher demand and lower domestic supplies.

Increased demand for most major products led to a 3.5 percent (563 thousand B/D) increase in total petroleum products supplied. Excluding distillates, which have been alternately rising and falling in year-to-year comparisons for recent months because of nonprimary inventory movements, the remaining products experienced a 4.3 percent increase for August. Gasoline deliveries' rise was consistent with recent trends; though the increase for residual fuel oil was smaller than for July as filling of user storage declined, it still represented a substantial gain.

Production in the lower 48 continued to decline in response to this year's substantiaily lower oil prices. Though down about 164 thousand B/D year to year in August, since the beginning of the year production outside Alaska has dropped at an annual rate of half a million barrels per day, contrasting sharply with previous trends. The combination of a distillate production increase of over 300 thousand B/D and the deliveries decline helped to raise distillate inventories about 16 million barrels over the month, an above-average increase.

PRODUCT SUPPLIED[1/]

Gasoline

LARGEST SUMMER GAIN SINCE 1978. August's gasoline deliveries rose 3.2 percent (231 thousand B/D) and brought the June-through-August increase to about 4 percent over last year's peak driving season. This increase, the largest for similar months since 1978, tends to confirm that summer driving patterns have responded to this year's substantially lower prices. As noted last month, peak-period driving historically has been more responsive to prices than has driving at other times of the year.

Retail prices rose slightly for the month, but, on an inflation-adjusted basis, were still about 28 percent lower than last August and only half of the early-1981 peak.

Distillates

SMALL NET GROWTH IN RECENT MONTHS. The 0.7 percent decline for distillates in August continues the alternating deliveries pattern of the prior three months—up about 6 percent in May, down over 4 percent in June, and up about 2 percent in July—averaging out to less than a one percent increase for the four-month period once some of the apparent swings in nonprimary inventories are netted out. Though consumption increases have occured in some sectors—primarily on-highway diesel—other sectors indicate little change. Data from the Department of Transportation indicate a 3 percent rise in diesel sales (including for off-highway use) for the first five months of this year. However, until recently, rail traffic has been relatively flat, domestic agricultural conditions indicate a decline in distillate requirements, and industrial activity has shown little year-to-year change. With little of residential/commercial deliveries representing actual consumption at this time of year, the modest growth of total distillate deliveries over the past several months mainly reflects increased diesel use.

Residual Fuel Oil

UTILITIES CONTINUE INCREASED PURCHASES. Residual fuel oil deliveries continued to rise in August, though the 275 thousand B/D, 23.5 percent increase was a third less than July's increase. Since little year-to-year change due to either bunker fuel deliveries or industrial fuel switching has been observed in recent months, it is likely that the increase largely represents greater purchases by electric utilities. The lesser rate of increase for August than for the prior two months may indicate that the filling of nonprimary inventories noted last month, which boosted deliveries for June and July, tapered off somewhat for August.

Indeed, recently-compiled data for June confirm the role utility inventory changes played in residual fuel oil deliveries in that month. Utilities increased their residual fuel oil stocks in June at a rate of over 60 thousand B/D. Combined with the previous June's decline in utility inventories, roughly 90 thousand B/D of June's 300 thousand B/D increase in total residual fuel oil deliveries can be attributed to shifts in electric utility inventories. With the probable increase in utility consumption for August ranging from 200 to 250 thousand B/D, the role of user inventory changes was apparently diminished from that of the prior two months.

Kerosine Jet Fuel

UP 12 PERCENT FOR AUGUST. After an unusual drop in July, August's deliveries returned to the range of increases more typical of those experienced earlier in the year, rising 12.2 percent or 122 thousand B/D. Available seat miles were up 10 percent in July, indicating that that month's deliveries decline was not related to air traffic developments.

Other Oils

MIXED RESULTS FOR INDIVIDUAL PRODUCTS. Deliveries of other oils have been relatively flat in recent months, with little year-to-year change in either direction. August's 1.3 percent, 53 thousand B/D increase continued that pattern. The experience for individual products, however, has varied greatly. Ethane deliveries, for example, have declined in the face of economics favoring heavier naptha- and gasoil-based feedstocks. Propane deliveries have continued to decline year-to-year while butanes and asphalt have shown gains.

(In millions of B/D)	AUGUST ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	16.6	16.1	3.5	16.1	15.7	2.5
—Motor gasoline supplied	7.5	7.2	3.2	7.0	6.9	2.2
—Distillate fuel oil supplied	2.6	2.6	(0.7)	2.9	2.9	0.8
—Residual fuel oil supplied	1.4	1.2	23.5	1.4	1.2	16.7

SUPPLY[1/]

Total supply rose 1,369 thousand B/D in August, the 878 thousand B/D decline in domestic supply partially offsetting total imports' 2,247 thousand B/D surge.

Production

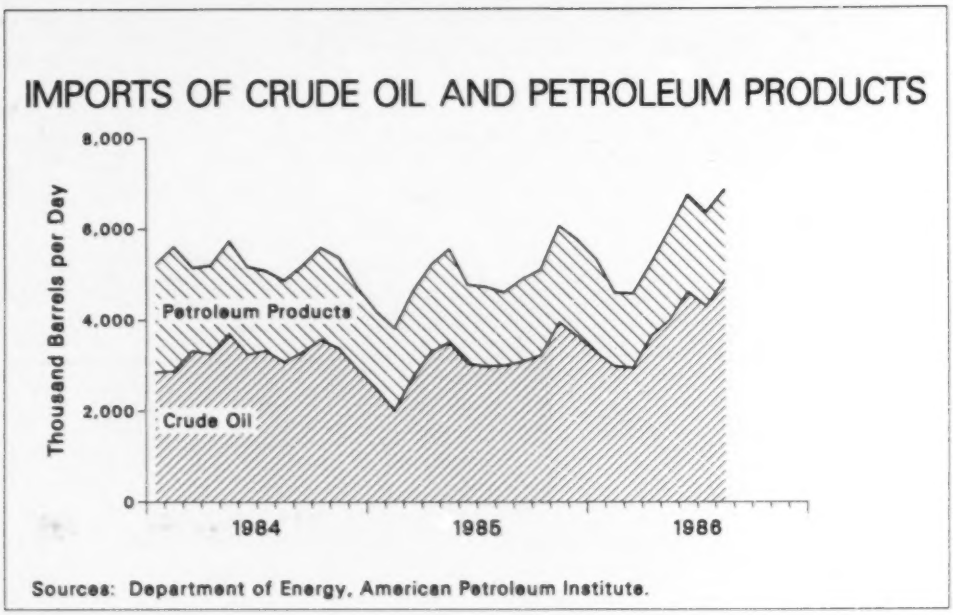
LOWER 48 DECLINE CONTINUES. Domestic crude oil production declined 1.7 percent or 150 thousand B/D in August, with most of the year-to-year decline attributable to slipping production in the lower 48. Year-to-year comparisons, however, partially obscure the impact the substantial crude oil price decline has had on lower 48 production trends since the beginning of the year. For the first eight months of 1986, estimated production outside Alaska has dropped an average of over 40 thousand B/D per month—equivalent to an annual rate of half a million barrels per day or 7 percent. This contrasts sharply with previous trends. Lower 48 production in 1985 was essentially the same as in 1984 and 2.5 percent higher than in 1983. Lower prices have greatly reduced the drilling of new wells and the maintanence and servicing of existing ones, with consequent results on crude oil production.

Imports

HIGHEST LEVEL SINCE 1980. Petroleum imports in August, at over 6.8 million B/D, were the highest since early 1980 as crude oil imports rose above their recent-year record set in June. Product imports also rose nearly 380 thousand B/D, and combined with crude oil's rise of nearly 1.9 million B/D, brought the total increase to over 2.2 million B/D. The increased availability of OPEC crude oil so far this year, combined with rising demand and domestic production that has been drifting downwards, all contributed to August's high import level.

As the graph shows, total imports have been rising almost uninterruptedly since early this year. About 40 percent of the roughly 1 million B/D, year-to-date increase is due to increased consumption and reduced domestic supplies; another 30 percent or so reflects a return to import levels that would be needed to sustain inventories at a seasonally-adjusted, constant level after a more-than-seasonal drawdown in the first eight months of 1985. Most of the remainder reflects additions to inventories this year above typical patterns.

Continued growth in residual fuel oil demand contributed to the 222 thousand B/D increase in imports of that product. Though distillate imports rose 174 thousand B/D year-to-year, about two thirds of the increase is attributable to unusually low imports last August. Imports of motor gasoline and components declined 44 thousand B/D.



Refinery Operations

DISTILLATE PRODUCTION AHEAD MORE THAN 300 MBD.

Refinery utilization continued in the mid-80s in August, a range it has remained within since May as refiners responded to increases in demand. Production of motor gasoline rose from July to nearly 7.1 million B/D, coming close to the recent-year highs of May and June. Distillate production exceeded 2.9 million B/D, rising 13 percent (337 thousand B/D) from last August and reaching the highest August level since 1979.

August's 85.6 percent utilization rate is calculated based on total operable capacity of about 15.6 million B/D, of which approximately 480 thousand B/D had been idle for more than a year as of June 1. This idle capacity was distributed by district as follows: 10 percent in PAD I, 21 percent in PAD II, 31 percent in PAD III, 3 percent is PAD IV, and 35 percent in PAD V.

Inventories

CRUDE OIL FALLS, DISTILLATE RISES.

Total inventories rose only slightly during August, a change not out of line with recent years' experience. An 11 million barrel increase in product stocks was largely offset by a 10 million barrel decline for crude oil despite the high level of crude oil imports. Distillate inventories rose 16 million barrels, about 10 million barrels more than the average August change of the prior three years. By the end of the month, the decline in deliveries, combined with high refinery production, brought distillate inventories to a level 19 million barrels higher than for August 1985.

(In millions of B/D)	AUGUST ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	17.3	16.0	8.6	17.0	16.0	6.3
—Crude production[2/]	8.7	8.8	(1.7)	8.9	9.0	(1.1)
—Crude oil imports[3/]	4.9	3.0	62.3	3.8	2.9	32.7
—Product imports	2.0	1.6	23.6	1.9	1.8	4.5

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 505 million barrels as of August 31, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	AUGUST			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	7,473	7,242	3.2	7,013	6,860	2.2
Finished leaded motor gasoline*	2,289	2,487	(8.0)	2,229	2,487	(10.4)
Finished unleaded motor gasoline*	5,184	4,755	9.0	4,784	4,373	9.4
Naphtha-jet	171	211	(19.0)	209	217	(3.7)
Kerosine-jet	1,120	998	12.2	1,059	974	8.7
Distillate fuel oil	2,618	2,636	(0.7)	2,890	2,866	0.8
Residual fuel oil	1,443	1,168	23.5	1,397	1,197	16.7
All other oils[4]	4,103	4,050	1.3	3,824	3,805	0.5
Reclassified[5]	- 305	- 245	24.5	- 303	- 228	32.9
Total domestic products supplied	16,623	16,060	3.5	16,089	15,691	2.5
Exports	670	749	(10.5)	753	740	1.8
Total products supplied	17,293	16,809	2.9	16,842	16,431	2.5
Supply:						
Domestic production:						
Crude oil[6]	8,653	8,803	(1.7)	8,879	8,975	(1.1)
Natural gas liquids	1,554	1,594	(2.5)	1,609	1,598	0.7
Other supply[7]	280	968	(71.1)	819	755	8.5
Total domestic supply	10,487	11,365	(7.7)	11,307	11,328	(0.2)
Imports:						
Crude oil, total	4,868[10/]	2,999[10/]	62.3	3,834[10/]	2,890[10/]	32.7
Canadian	567	408	39.0	547	454	20.5
Other	4,301	2,591	66.0	3,287	2,436	34.9
Products, total	1,981	1,603	23.6	1,887	1,805	4.5
Residual fuel oil	646	424	52.4	636	457	39.2
Other	1,335	1,179	13.2	1,251	1,348	(7.2)
Total imports	6,849	4,602	48.8	5,721	4,695	21.9
Total supply	17,336	15,967	8.6	17,028	16,023	6.3
Stock change, all oils	+ 43	- 842	XXXX	+ 186	- 408	XXXX
Refinery Operations						
Input to crude oil distillation units	13,359	12,222	9.3	12,761	12,017	6.2
Operable capacity	15,602	15,734	(0.8)	15,530	15,647	(0.7)
Refinery utilization (%)[8]	85.6%	77.7%	10.2	82.2%	76.8%	7.0
Crude oil runs	13,254	12,045	10.0	12,653	11,862	6.7

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	Aug. 31[9]	July 31[9]	Aug. 31	Previous Month	Year Ago
Crude oil [10/]	331.4	341.1r/	318.5	(2.8)	4.1
Unfinished oils	100.9	108.2	103.4	(6.7)	(2.4)
Total motor gasoline**	218.9	222.6r/	221.6	(1.7)	(1.2)
Finished leaded motor gasoline*	69.4	71.8	79.1	(3.3)	(12.3)
Finished unleaded motor gasoline*	114.4	116.4r/	109.0	(1.7)	5.0
Naphtha-jet	6.1	5.5	7.0	10.9	(12.9)
Kerosine-jet	42.6	43.1	34.7	(1.2)	22.8
Distillate fuel oil	132.5	116.6r/	113.8	13.6	16.4
Residual fuel oil	40.8	39.7	37.2	2.8	9.7
All other oils	197.6	192.6r/	170.5	2.6	15.9
Total all oils	1,070.8	1,069.4r/	1,006.7	0.1	6.4

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-June, U.S. Department of Energy, July-August, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

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Prepared by the Statistics Department

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SEPTEMBER 1986

ESTIMATED U. S. PETROLEUM BALANCE

SUMMARY

Third quarter data confirm that the rate of increase in total deliveries has been growing so far this year, as lower prices increased driving and fuel switching and growing air traffic continued to raise jet fuel consumption. Following a year of essentially no growth in 1985, total deliveries rose 1.2 percent in the first quarter of 1986, 2.4 percent in the second, and, for the most recent quarter, 3.9 percent.

September deliveries rose 4.0 percent (607 thousand B/D), with continued strong gains for gasoline, residual fuel oil, and kerosine jet fuel. Distillate deliveries declined, probably because earlier purchases reduced distributors' and end users' needs for current supplies.

Domestic crude oil production declined 4 percent (360 thousand B/D). Though the roughly 90 thousand B/D drop in Alaskan production was caused by a temporary interruption in pipeline operations, the more than 270 thousand B/D decline for the lower 48 continues a pattern of declines that has persisted since early this year when lower oil prices began to discourage the drilling of new wells and the maintenance of existing production.

Though OPEC members apparently cut crude oil production by close to 4 million B/D in September from levels that had risen to over 20 million B/D in July and August, transportation lags helped to account for September's imports increase to nearly 7.0 million B/D—a level even higher than August's recent-year record of over 6.8 million B/D.

In addition to satisfying increased demand and replacing declining domestic production, the high level of imports contributed to a more-than-seasonal inventory build of over 37 million barrels, three times the average of the prior three years and the largest September increase since the mid-70s. Distillate stocks rose to 150 million barrels, the highest level for that month since 1983.

PRODUCTS SUPPLIED[1/]

Gasoline

STRONG GROWTH CONTINUES.

Gasoline deliveries rose 5.1 percent (338 thousand B/D) in September, following an average increase of over 4 percent during the June-to-August peak season. That September's increase is even larger than that of the summer driving season, when a greater proportion of price-sensitive, discretionary driving takes place, is somewhat unexpected. Though it could well be that the increase represents continued upward adjustment of demand to this year's markedly lower price levels, it appears more likely that September deliveries overstated consumption gains somewhat.

Unleaded grades now account for roughly 69 percent of gasoline sales, up about 4 percentage points year-to-year for the third quarter. Though lower prices and promotional efforts have increased motorists' substitution of premium unleaded for other grades—premium unleaded typically sells for less now than regular grades did a year ago—the continued turnover of the vehicle fleet and scrappage of vehicles using leaded grades remains the primary factor in market share changes. Of the 4 percentage point gain in share for all grades of unleaded, an estimated 1-1½ percentage points represents increased sales of premium.

Distillates

DELIVERIES DECLINE DESPITE LIKELY CONSUMPTION GROWTH.

Despite likely continued growth in diesel fuel consumption, distillate deliveries declined 2.4 percent (61 thousand B/D) in September. Diesel fuel sales are estimated to have continued their 3 to 4 percent growth experienced in the first half, adding 40 to 50 thousand B/D to September demand. Rail traffic has shown a modest recovery in recent months, though the impact on overall distillate use of September's 4 percent improvement is small; other sectors have shown little recent strength. Thus, September's distillate deliveries decline does not correspond with other indicators, which suggest that distillate consumption as a whole is edging upwards at a rate of about one percent. One explanation could be that earlier building of nonprimary inventories, which are not included in API or Department of Energy data, reduced distributors' and end users' requirements for current deliveries in September.

Residual Fuel Oil

FUEL SWITCHING RAISES DELIVERIES. Residual fuel oil deliveries rose 27.3 percent (281 thousand B/D) in September, mainly on the continued strength of fuel switching at electric utilities. This switching has taken place primarily along the East Coast; electric utilities in Florida alone account for over a third of the 250 thousand B/D increase in petroleum purchases by utilities for the second quarter.

Electric utility purchases have caused residual fuel oil deliveries to rise strongly this year, but the overall effect on U.S. electric generation has been quite small—petroleum's share of energy inputs to electric utilities still amounted to only 5 percent in the first half of 1986. Though petroleum gained a percentage point in share compared to the similar period of 1985, nuclear and hydroelectric power together gained somewhat more. Reduced shares for natural gas and coal balanced the increases for other energy sources.

Industrial fuel switching, encouraged by residual fuel oil prices at about half of 1985 levels, has had only a minor apparent impact on total residual fuel oil deliveries, probably not greater than 30 thousand B/D. Nevertheless, numerous industrial users with dual-fuel capability have switched away from natural gas in 1986. Though some gas utilities have won back some industrial users with rate adjustments and gas transportation programs, these efforts have largely been only partially successful; the net shift in this sector towards oil has remained.

Kerosine Jet Fuel

AIR TRAFFIC INCREASES USAGE. Strong growth in commercial air traffic continues to be reflected in deliveries of kerosine jet fuel, which rose 14.1 percent (141 thousand B/D) in September. The third quarter increase of 10.8 percent is approximately in line with increases in available seat miles in recent months of about 10 percent. The correspondence has been apparent over the longer term as well. Year-to-date, available seat miles have jumped about 12 percent, compared to only a 6 percent increase in 1985. Kerosine jet fuel deliveries have paralleled these traffic developments, with this year's more than 10 percent year-to-date increase also roughly doubling that of last year.

Other Oils

DOWN 1.3 PERCENT. Deliveries of all other oils declined 1.3 percent (51 thousand B/D) in September. These products, taken as a whole, have followed a pattern contrary to the stronger growth of most major products this year. Last year, deliveries of all other oils increased about 1.1 percent overall; this year, deliveries are off 0.7 percent for the year to date, primarily because of a decline for liquefied petroleum gases amounting to roughly 100 thousand B/D. Contributing to this decline are ethane and propane, succumbing to less costly crude-oil-based petrochemical feedstocks, and in the case of propane, warmer weather early in the year.

(In millions of B/D)	SEPTEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total domestic products supplied	15.7	15.1	4.0	16.0	15.6	2.5
—Motor gasoline supplied	7.0	6.6	5.1	7.0	6.8	2.7
—Distillate fuel oil supplied	2.5	2.6	(2.4)	2.8	2.8	0.5
—Residual fuel oil supplied	1.3	1.0	27.3	1.4	1.2	18.2

SUPPLY[1/]

The high import levels of the past several months continued in September, contributing to an increase in total supply of 1,453 thousand B/D despite a decline from domestic sources of 638 thousand B/D.

Production

PIPELINE PROBLEM REDUCES ALASKAN OUTPUT. An Alaskan production decline of roughly 90 thousand B/D, the result of temporary pipeline difficulties, adding to a 270 thousand B/D drop in lower 48 production, brought the year-to-year decline in total U.S. production to 360 thousand B/D for September. For the third quarter as a whole, the decline of about 240 thousand B/D took place almost entirely in the lower 48. Contrasting with stable production levels preceding this year's crude oil price drop, production outside Alaska has declined an average of 40 thousand B/D per month since the beginning of the year—an annual decline rate of nearly half a million barrels per day.

Imports

UP DESPITE OPEC CUTBACK. Petroleum imports, which in August had already reached the highest level since 1980, rose to nearly 7.0 million B/D in September as additional crude oil, some of it lifted before OPEC's September production cutback, continued to arrive at U.S. ports. Half of the nearly 2.1 million B/D increase in total imports is accounted for by greater inventory building this year than last; nevertheless, the effects of this year's substantially lower petroleum prices on domestic consumption and production have altered import requirements significantly. The roughly 500 thousand B/D annual decline trend for U.S. crude oil production and an upward trend in

deliveries of at least 600 thousand B/D imply a current underlying annual growth rate for imports of over 1 million B/D. Last year, by contrast, stable consumption and domestic production implied no net growth in import requirements.

Though the largest part of the import surge has come from OPEC producers, a significant portion has more recently come from other sources. Of the 1.5 million B/D increase in crude oil imports from the first quarter to the June-July period, more than 40 percent came from non-OPEC producers, including Mexico, the United Kingdom, and Colombia. A similar proportion of the 0.4 million B/D increase in product imports came from non-OPEC sources as well. Except for Colombia, the rise in non-OPEC imports largely reflects shifts in trade patterns rather than in production trends in non-OPEC countries and demonstrates the fungibility of petroleum on world markets.

Product imports rose 146 thousand B/D; residual fuel oil's 13 thousand B/D decline is largely the result of increased imports last September.

Refinery Operations

UTILIZATION CONTINUES ABOVE 80 PERCENT. Input to crude oil distillation units continued at over 13 million B/D in September, a range that, except for the past several months, has not been achieved since the early 1980s. Gasoline output rose by about 10 percent over last September and distillate by 13 percent. Somewhat higher light product yields contributed to these production increases, though the bulk of these increases was due to the nearly 8 percentage point increase in refinery utilization compared to last year. Utilization declined steadily during the month, though it remained above 80 percent through month end.

Inventories

MORE-THAN-SEASONAL RISE FOR PRODUCTS. Total stocks have been rising almost uninterruptedly since May; September's high import levels brought the month's increase to over 37 million barrels, three times the average of the prior three years and the largest September increase since the mid-70s. Refinery utilization, high compared to recent years, helped to route all but 4 million barrels of the increase into product inventories. Gasoline stocks rose 11 million barrels, and distillate stocks, nearly 18 million barrels, both about twice the respective averages of the prior three Septembers. As a result, distillate stocks as the heating season approached were the highest since 1983.

(In millions of B/D)	SEPTEMBER ESTIMATES			YEAR-TO-DATE ESTIMATES		
	1986	1985	% Change	1986	1985	% Change
—Total supply	17.6	16.1	9.0	17.1	16.0	6.5
—Crude production[2/]	8.6	9.0	(4.0)	8.8	9.0	(1.5)
—Crude oil imports[3/]	5.0	3.1	63.1	4.0	2.9	37.4
—Product imports	2.0	1.8	8.0	1.9	1.8	5.4

1/ Total supply, i.e., production plus imports adjusted for net stock change is equal to total products supplied from primary storage. Total products supplied from primary storage less exports is equal to total domestic products supplied. Information contained in this report is derived from information published in the API Weekly Bulletin and is based on historical analysis of the industry. All data reflect the most current information available to the API and include all previously published revisions.

2/ Includes lease condensate.

3/ API data do not include crude oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR (according to the U.S. Department of Energy, the SPR held approximately 506 million barrels as of September 30, 1986).

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	SEPTEMBER			YEAR-TO-DATE		
	1986[1]	1985[2]	% Change	1986[3R]	1985[2]	% Change
Products Supplied:						
Total motor gasoline	6,967	6,629	5.1	7,020	6,835	2.7
Finished leaded motor gasoline*	2,164	2,272	(4.8)	2,223	2,463	(9.7)
Finished unleaded motor gasoline*	4,803	4,357	10.2	4,797	4,372	9.7
Naphtha-jet	196	208	(5.8)	208	216	(3.7)
Kerosine-jet	1,143	1,002	14.1	1,078	977	10.3
Distillate fuel oil	2,514	2,575	(2.4)	2,848	2,834	0.5
Residual fuel oil	1,312	1,031	27.3	1,394	1,179	18.2
All other oils[4]	3,930	3,981	(1.3)	3,799	3,824	(0.7)
Reclassified[5]	- 355	- 326	8.9	- 325	- 238	36.6
Total domestic products supplied	15,707	15,100	4.0	16,022	15,627	2.5
Exports	631	806	(21.7)	725	747	(2.9)
Total products supplied	16,338	15,906	2.7	16,747	16,374	2.3
Supply:						
Domestic production:						
Crude oil[6]	8,594	8,954	(4.0)	8,839	8,973	(1.5)
Natural gas liquids	1,550	1,575	(1.6)	1,601	1,595	0.4
Other supply[7]	442	695	(36.4)	732	749	(2.3)
Total domestic supply	10,586	11,224	(5.7)	11,172	11,317	(1.3)
Imports:						
Crude oil, total	5,029[10/]	3,084[10/]	63.1	4,001[10/]	2,911[10/]	37.4
Canadian	536	518	3.5	542	461	17.6
Other	4,493	2,566	75.1	3,459	2,450	41.2
Products, total	1,962	1,816	8.0	1,904	1,806	5.4
Residual fuel oil	605	618	(2.1)	618	475	30.1
Other	1,357	1,198	13.3	1,286	1,331	(3.4)
Total imports	6,991	4,900	42.7	5,905	4,717	25.2
Total supply	17,577	16,124	9.0	17,077	16,034	6.5
Stock change, all oils	+1,239	+ 218	XXXX	+ 330	- 340	XXXX
Refinery Operations						
Input to crude oil distillation units	13,238	12,096	9.4	12,802	12,026	6.5
Operable capacity	15,602	15,728	(0.8)	15,523	15,656	(0.8)
Refinery utilization (%)[8]	84.8%	76.9%	10.3	82.5%	76.8%	7.4
Crude oil runs	13,131	11,925	10.1	12,698	11,869	7.0

Stocks (millions bbls.)	1986		1985[2]	% Change from ...	
	Sep. 30[9]	Aug. 31[9]	Sep. 30	Previous Month	Year Ago
Crude oil [10/]	335.1	331.6r/	317.4	1.1	5.6
Unfinished oils	97.8	100.9	104.1	(3.1)	(6.1)
Total motor gasoline**	230.3	219.0r/	223.1	5.2	3.2
Finished leaded motor gasoline*	68.9	69.4	76.1	(0.7)	(9.5)
Finished unleaded motor gasoline*	122.8	114.5r/	111.3	7.2	10.3
Naphtha-jet	6.2	6.1	6.9	1.6	(10.1)
Kerosine-jet	43.0	42.6	35.2	0.9	22.2
Distillate fuel oil	150.0	132.3r/	117.4	13.4	27.8
Residual fuel oil	43.6	40.8	43.4	6.9	0.5
All other oils	209.7	205.2r/	165.7	2.2	26.6
Total all oils	1,115.7	1,078.5r/	1,013.2	3.4	10.1

1/ Based on API estimated data converted to a monthly basis.
2/ Source: U.S. Department of Energy.
3/ Source: January-July, U.S. Department of Energy, August-September, API.
4/ Includes crude losses.
5/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
6/ Includes lease condensate.
7/ Includes unaccounted-for crude oil, refinery input of other hydrocarbons, and processing gain.
8/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
9/ Derived by interpolating API weekly stocks data.
10/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
R/ Revised.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.

ESTIMATED UNITED STATES PETROLEUM BALANCE

(Daily Average in Thousands of 42 Gallon Barrels)

Products Supplied/Supply From Primary Storage	3rd QUARTER		
	1986[1]	1985[2]	% Change
Products Supplied:			
Total motor gasoline	7,324	6,963	5.2
Finished leaded motor gasoline*	2,248	2,409	(6.7)
Finished unleaded motor gasoline*	5,076	4,554	11.5
Naphtha-jet	201	209	(3.8)
Kerosine-jet	1,111	1,003	10.8
Distillate fuel oil	2,538	2,549	(0.4)
Residual fuel oil	1,423	1,086	31.0
All other oils[3]	3,898	4,017	(3.0)
Reclassified[4]	- 352	- 291	21.0
Total domestic products supplied	16,143	15,536	3.9
Exports	647	743	(12.9)
Total products supplied	16,790	16,279	3.1
Supply:			
Domestic production:			
Crude oil[5]	8,662	8,901	(2.7)
Natural gas liquids	1,554	1,579	(1.6)
Other supply[6]	519	827	(37.2)
Total domestic supply	10,735	11,307	(5.1)
Imports:			
Crude oil, total	4,832[9/]	3,019[9/]	60.1
Canadian	553	436	26.8
Other	4,279	2,583	65.7
Products, total	2,027	1,721	17.8
Residual fuel oil	640	491	30.3
Other	1,387	1,230	12.8
Total imports	6,859	4,740	44.7
Total supply	17,594	16,047	9.6
Stock change, all oils	+ 804	- 232	XXXX
Refinery Operations			
Input to crude oil distillation units	13,197	12,330	7.0
Operable capacity	15,558	15,710	(1.0)
Refinery utilization (%)[7]	84.8%	78.5%	8.0
Crude oil runs	13,095	12,141	7.9

Stocks (millions bbls.)	3rd QUARTER		
	1986[8]	1985[2]	% Change
Crude oil	335.1[9/]	317.4[9/]	5.6
Unfinished oils	97.8	104.1	(6.1)
Total motor gasoline**	230.3	223.1	3.2
Finished leaded motor gasoline*	68.9	76.1	(9.5)
Finished unleaded motor gasoline*	122.8	111.3	10.3
Naphtha-jet	6.2	6.9	(10.1)
Kerosine-jet	43.0	35.2	22.2
Distillate fuel oil	150.0	117.4	27.8
Residual fuel oil	43.6	43.4	0.5
All other oils	209.7	165.7	26.6
Total all oils	1,115.7	1,013.2	10.1

1/ Source: U.S. Department of Energy, July; August-September, API.
2/ Source: U.S. Department of Energy.
3/ Includes crude losses.
4/ Beginning with January 1981, U.S. Department of Energy began using a new data collection system which encompasses a method to ascertain the amount of product reclassified during the production phase. So that there will be no double counting of these volumes, they are subtracted from total domestic products supplied.
5/ Includes lease condensate.
6/ Includes Unaccounted-for crude oil, Refinery input of other hydrocarbons, and Processing gain.
7/ Represents "Input to crude oil distillation units" as a percent of "Operable capacity."
8/ Derived by interpolating API weekly stocks data.
9/ Data do not include oil imported for the Strategic Petroleum Reserve (SPR) nor crude oil stocks held in the SPR.
* Included in motor gasoline.
** Includes finished leaded, finished unleaded, and motor gasoline blending components stocks.